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CONTENTS

From Your President . . . 170

The Effect of a Cavity Liner on the Staining of Dentin—*Charles W. Fain, Jr., D.D.S.* . . . 171

Cast Restorations With Baked Porcelain Incisal Edges for Fractured Young Permanent Incisors—*Lloyd Baum, D.M.D., Jess Hayden, Jr., D.M.D., Dean Boulie* . . . 177

Plaster of Paris as a Root Canal Filling Material—*Ivar A. Mjor, B.D.S., M.S.D.* . . . 182

Unit News—*Tiny Konikow* . . . 185

Intravenous Anesthesia in the Pediatric Ambulatory Patient—*A. A. Conte, M.D., L. E. Dietz, D.D.S.* . . . 197

Psychological Approach to Mental Retardation in Dental Practice—*John R. Kleiser, Ph.D.* . . . 199

Abstract . . . 207

Case Report—*Earl Elman, D.D.S.* . . . 208

Routine Preoperative Medication in Dentistry for Children—*Joseph G. Stewart, D.M.D.* . . . 209

A Study of the Treatment of Infected and Necrotic Primary Teeth—*Captain Roy J. Velling, D.C., A.U.S.* . . . 213

Premedication for Routine Dentistry for the Handicapped—*C. R. Castaldi, D.D.S., M.S.D.* . . . 218

Book Review . . . 224

Officers of the American Society of Dentistry for Children—1960-61 . . . 225

from your president

For many years A.S.D.C. has demanded unlimited economic sacrifice on the part of its officers, executive council and committee members. As the organization grew in number, stature, and national importance, the burden increased and the economic penalty of serving our Society presented a personal problem for those called upon to serve. Only men who had affiliations with institutions generous enough to release stenographic aid, facilities, and supplies were considered for specific offices in A.S.D.C. While our Society is fortunate in having men of high caliber in such positions, several past presidents and executive council members recognized that A.S.D.C. had matured to the point where a realistic approach to our budget must be made. Many capable men not affiliated with such institutions can now be considered for nomination to national affairs.

At the 1960 Annual Meeting, Harold Addelston and his budget committee presented to the Council and delegates a realistic budget. It was an "eye-opener" for many of us. Each officer and committee chairman was directed to keep detailed records for future guidance. The reports received during the Ad Interim meeting indicated the wisdom of our 1960 decisions.

Each State Unit should require delegate participation at the Annual Meeting. We want and need your help to maintain our sphere of influence in the field of dentistry for children and to advise us in our efforts towards progress in dental education of the profession and the public.

* * *

The Dan Mizzy Merit Award Contest was most successful and we are grateful to Mr. and Mrs. Albert Mizzy for their interest in establishing this award and for the generous support that they have continued to give to this fund.

The 1961 winners are: First place—Mr. Kenneth Keyes ($200.00), University of Oregon Dental School. Co-second place winners ($100.00 each)—Gene Hallock and Kenneth Dubnick, School of Dentistry, University of Washington, Seattle.

Doctor Ralph McDonald, Dean John Brauer, and Doctor Richard Jennings comprised the awards committee this year and I am most appreciative of their participation in this program.

See you in Philadelphia.

JAMES H. SIMMONS

The Effect of a Cavity Liner on the Staining of Dentin*

CHARLES W. FAIN, JR., D.D.S.

Epitome

An experiment was undertaken to determine if a specific cavity liner would prevent a greenish-gray discoloration, typical of metallic particles in the dentin under restorations of silver amalgam. One hundred freshly extracted teeth containing old amalgams were hemisected and examined. A greenish-gray discoloration was evident in 73 per cent of the teeth without bases. The teeth containing bases showed no evidence of this discoloration. Since the available evidence indicates that this discoloration is due to galvanic action which causes metallic ions to pass from amalgam into the dentin, an attempt was made to reproduce this study in vitro.

Teeth containing restorations of silver amalgam with and without a specific cavity liner, were subjected to galvanic action and immersed in a sulfide solution. The teeth without the cavity liner developed a greenish-gray discoloration. The discoloration was not evident in the teeth containing the cavity liner.

Introduction

THE greatest share of the family dentist's time is consumed by restoring cavities in teeth with silver amalgam. Schoonover and Souder[1] have stated that more restorations are made from silver amalgam than all other materials combined. Brekhus and Armstrong[2] have pointed out that silver amalgam is the most frequently used material in restorative dentistry and that there is a lower percentage of failure with it than with any other material.

Observation in one's office will show many failures of amalgam restorations. One of the failures is the discoloration of dentin under restorations of amalgam. Massler[3] has observed that the discoloration of teeth following restoration with silver amalgam has been noted clinically ever since it first was used, and, for this reason, its use has been limited to posterior teeth. Bödecker,[4] Black,[5] Applebaum,[6] Miller,[7] Fish,[8] Shell,[9] Schoonover and Souder,[10] and Massler and Barber[11] have shown that the discoloration was produced by the penetration of the dentin by metallic particles from the amalgam.

A study was organized, because of the interest expressed in discoloration, to determine if a cavity liner, consisting of calcium hydroxide dispersed in a solution of polystyrene in chloroform, would prevent the passage of metallic particles from amalgam into dentin.

This study utilized 100 freshly extracted teeth which contained old restorations of silver amalgam. They were hemisected and then examined. The teeth were placed in a 0.5 per cent solution of phenol in water, immediately after extraction, to prevent putrefaction and to fix the tissues.

Review of the Literature

A review of the literature reveals, as far back as 1894, that Bödecker[4] de-

* Presented at the 13th Annual Meeting of the American Academy of Pedodontics, Boulder, Colorado, Aug. 28-31, 1960.

scribed the ground section of a tooth that had been filled with amalgam for many years. He reported: "The border of the cavity is, in the upper portion, seen in the breadth of the specimen, and here it holds a number of black metallic particles, evidently not of the amalgam itself, but of a sulphur-combination of the silver or quick silver." Black[5] blamed discoloration of the dentin from amalgam, to leakage that allowed the sulphides of the saliva to penetrate into the dentin from the cavity. Later studies by Applebaum[6] showed that the gray discoloration of the enamel was produced by the sulphides of mercury carried through the tubules to the matrix of the enamel. Bödecker[12] stated that there was an afferent circulation in every normal tooth, passing from the pulp through the dentin into the enamel, and a return current by the same path, back to the pulp chamber. Fish[8] stated that it has been demonstrated that the dentinal tubules are lymph channels through which a stream of lymph flows in sufficient volume to carry solid particles of pigment into the middle of the dentin. Bödecker and Applebaum[13] stated in 1930 that the dentinal tubules passing from the pulp to the cavity were permeable, and that the use of a varnish was recommended strongly under fillings in vital teeth. Massler[14] suggested in 1956 that the inhibitory action of amalgam on odontoblasts, when placed in deep cavities, was produced not only by transmitting thermal shock, but also by the transmission of mercuric ions through the dentinal tubules to the body of the odontoblasts because of electrogalvanic action.

Most of the controversy concerning the penetration of metallic particles from amalgam into dentin evolved around its explanation as the result of galvanic action. Randall and Young[15] noted that the earliest recorded observations of electrolytic action apparently were those of Sulzer in 1752. Sulzer recognized a taste similar to that of ferrous sulfate when he touched his tongue to strips of lead and silver which were in contact. When he touched the strips separately to his tongue no taste was apparent. Solomon and Rienhard[16] point out as early as 1792 that Galvani had experimented in his mouth with the electrolytic properties of saliva. They state also that Palmer and Chase prepared papers in 1876 to report their observations on the galvanic action of metals used to restore lost structure of teeth. Both of these men attempted to associate galvanism with pulpal shocks, as well as with recurrent caries and marginal leakage of restorations in teeth. Shell,[9] in 1953, wrote that a metal in contact with two solutions of different composition would develop a relatively small difference in potential and produce a correspondingly small current. The current tended to cause a solution of the component metals of the alloy and resulted in some disintegration of the metal. If the metals used for restorations were not sufficiently "noble," this current might cause a concentration of metallic ions around the margins of restorations and produce a detrimental effect. Mumford[17] stated in 1953, when plates of two dissimilar metals were placed in a conducting liquid, such as an aqueous solution of a salt or acid, that the system became a source of electricity. Such a source generally was designated as a "voltaic cell" or "galvanic cell." Farrell[18] pointed out in 1958 that when metals were placed in the mouth in contact with saliva, cells were formed and electric currents started to flow. The two metals might be quite separate, for example two different restorations or

different portions of a single restoration (metals hardly ever are homogeneous). Phillips[19] stated in 1958 that there could be no doubt that galvanic currents existed and developed a magnitude generally of 0.5 microamperes, or a corresponding E.M.F. of approximately 500 millivolts. The currents were somewhat greater when dissimilar metals were present, but occurred between restorations of similar metals or even in a single isolated metallic restoration. In the single restoration, the cell was created between the two electrolytes (saliva and "bone-fluid") and the metal. Schriver and Diamond[20] stated in 1952, when a piece of metal made contact with two different electrolytes, and these two electrolytes made contact with each other, through a porous substance, for example, then a net E.M.F. develops in that circuit, and an electric current passes through the metal and through the electrolytes. In Figure 1 a restoration of silver amalgam is shown which is in contact with both of the electrolytes, saliva and the fluid of bone. Since saliva and osseous fluid are in contact through tissue, one would expect an electric current through the restoration as indicated in the figure. Massler and Barber,[11] in 1953, reported that the darkening of the dentin and corrosion of both the inner and outer surfaces of the silver amalgam were caused by the galvanic action inherent in all amalgams. Massler[14] pointed out that this action could be prevented in large part by an insulating base between the pulpal floor and the restoration. A base not only would insulate the pulp against thermal shock and eliminate pulpal sensitivities, which often last for months prior to the formation of secondary dentin under deep restorations, but also, would prevent darkening of the contiguous dentin, as well as pitting and corrosion of the surface of the amalgam.

There is considerable lack of information concerning the physical and chemical properties of the liners used in dental practice today. Zander, Glenn, and Nelson[21] reported in 1950, that a cavity liner, in order to be adequate, must protect the pulp by preventing penetration of any injurious components of a cement or other restorative material. In their experimental studies of cavity liners, they found one effective that consisted of calcium hydroxide and zinc oxide suspended in a solution of polystyrene in chloroform. Silberkweit, Massler, Schour, and Weinmann,[22] reported in 1955, when a liner, consisting of calcium hydroxide dispersed in a solution of polystyrene in chloroform, was used in shallow cavities filled with black copper cement, that the expected injurious effects of the copper cement were reduced greatly. A "calcio-traumatic" band was

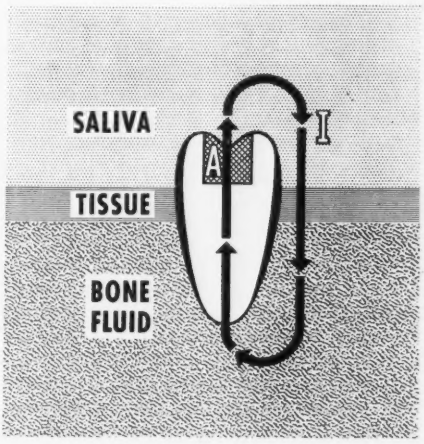

FIGURE 1. Diagram showing an amalgam filling which contacts both of the electrolytes, saliva and bone fluid. Since saliva and bone fluid are also in contact through tissue, one would expect an electric current through the restoration as indicated by I.

FIGURE 2. Hemisection through old amalgam restoration, without a base, showing discoloration of the underlying dentin.

FIGURE 3. Hemisection through old amalgam restoration, with a base, showing no discoloration of the underlying dentin.

FIGURE 4. Hemisection through old amalgam restoration showing discoloration typical of recurrent caries.

formed at the time of operation, but the postoperative dentin was almost normal in quality and quantity.

Preliminary Observations

After hemisecting and examining the 100 freshly extracted teeth, containing old restorations of amalgam, a number of observations were made. A greenish-gray discoloration was evident in the dentin of 57 teeth which did not have bases (Fig. 2). The 22 teeth containing bases exhibited no greenish-gray discoloration (Fig. 3). Thirteen teeth exhibited a brownish discoloration typical of recurrent penetration by caries (Fig. 4), and eight teeth without bases showed no discoloration. The available evidence

FIGURE 5. Preparation of in vitro model with nickel silver wire electrode embedded in amalgam.

FIGURE 6. Preparation of in vitro model with electrodes embedded in amalgam and inserted in the pulp canal. A band of insulating wax encircles the tooth.

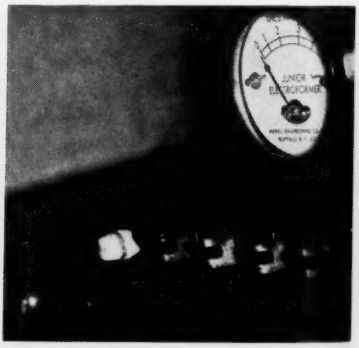

FIGURE 7. In vitro model connected to a Hanau Electroplater by which a controlled amount of electric current is passed through the tooth model.

seems to indicate that the greenish-gray discoloration must be the result of galvanic action over a long period of time.

Methods and Materials

After studying the report of Massler and Barber,[11] a technic was developed and utilized in an attempt to produce a greenish-gray discoloration, typical of metallic particles, in the dentin of freshly extracted non-carious teeth.

Occlusal preparations were made in 30 freshly extracted, non-carious bicuspids. Fifteen of the preparations were painted with a cavity liner, consisting of calcium hydroxide dispersed in a solution of polystyrene in chloroform. Amalgam restorations were inserted with a nickel silver wire electrode embedded in them (Fig. 5). A second electrode was inserted in the pulpal canal, which had been enlarged and embedded in cotton saturated by a normal saline solution. A ring of insulating wax was placed around each tooth to prevent the electric current from passing along the outer surface of the tooth (Fig. 6). The electrodes were connected to a Hanau Electroplater (Fig. 7), and a controlled amount of electrical current (7 Volts) was passed through the teeth for varying lengths of time. The teeth then were placed in an eight per cent ammoniacal solution of hydrogen sulfide for 30 minutes. The remaining teeth were treated in the same manner, except that the cavity liner was not used, and the teeth were restored with silver amalgam by packing this material directly in contact with the dentin. The 30 teeth were hemisected and examined.

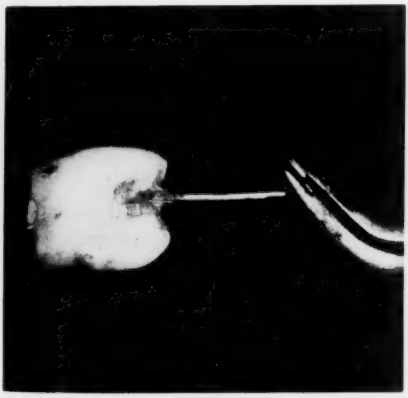

FIGURE 8. Hemisection of in vitro model, with the cavity liner, showing no evidence of discoloration in the dentin.

FIGURE 9. Hemisection of in vitro model with the amalgam in direct contact with the dentin showing a typical discoloration of the dentin.

Findings

The teeth in which the cavity liner was used showed no evidence of discoloration of the dentin (Fig. 8). A greenish-gray discoloration was demonstrable in the dentin of the 15 teeth which have the amalgam packed in direct contact with the dentin (Fig. 9). This discoloration was not evident until after solutions of sulfide were added to the teeth. Massler and Barber[11] stated that the hypothesis of an endogenous source of sulfides was not supported by their ex-

periment, since precipitation of the metallic ions within the dentin occurred after sulfides were added to the matrix. The source of the sulfides was unknown but they probably came externally from the saliva.

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BIBLIOGRAPHY

1. SHOONOVER, I. C., and SOUDER, WILMER: Research on dental materials at the National Bureau of Standards. National Bureau of Standards Circular 497. Washington, Government Printing Office, 1950. II + 14 p.
2. BREKHUS, P. J., and ARMSTRONG, W. D.: Civilization—a disease. Am. Dent. A. J., 23:1459-70, Aug. 1936.
3. MASSLER, MAURY: Pulp protection and preservation. P.D.M., p. 3-47, Jan. 1958.
4. BÖDECKER, C. F. W.: Anatomy and pathology of the teeth. Philadelphia, S. S. White Dental Manufacturing, 1894, 676 p.
5. BLACK, G. V.: A work on operative dentistry in two volumes. 6th ed. Chicago, Medico-Dental Publishing, 1924, 2 vols. vol. 2. XVI + 442 p.
6. APPLEBAUM, EDMUND: Lymph channels in dentine and enamel stained by amalgam. J. Dent. Res., 9:487-502, Aug. 1929.
7. MILLER, E. C.: Modern concept of amalgam manipulation. Chicago Dent. Soc. Fortn. Rev., 18:5-10, 25, Oct. 15, 1949.
8. FISH, E. W.: The circulation of lymph in dentin and enamel. Am. Dent. A. J., 14:804-17, May 1927.
9. SHELL, J. S.: Galvanic action of metals in the mouth. South. Calif. S. Dent. A. J., 21:24-6, Oct. 1953.
10. SCHOONOVER, I. C., and SOUDER, WILMER: Corrosion of dental alloys. Am. Dent. A. J., 28:1278-91, Aug. 1941.
11. MASSLER, MAURY, and BARBER, T. K.: Action of amalgam on dentin. Am. Dent. A. J., 47:415-22, Oct. 1953.
12. BÖDECKER, C. F.: The dento-enamel circulation. J. Dent. Res., 6:113-6, Mar. 1924-6.
13. BÖDECKER, C. F., and APPLEBAUM, EDMUND: Effect of filling materials on the pulp. Dent. Cosmos, 72:1001-14, Oct. 1930.
14. MASSLER, MAURY: Effects of filling materials on the pulp. N. Y. J. Dent., 26:183-98, May 1956.
15. RANDALL, M., and YOUNG, L. E.: Elementary physical chemistry. Berkley, Randall and Sons, 1956. XIV + 554 p. (p. 319).
16. SOLOMON, H. A., and REINHARD, M. C.: Electric phenomena from dental metals. Dent. Surv., 4:23-5, 64-8, Dec. 1933.
17. MUMFORD, J. M.: Electrolytic action in conservative dentistry and its relationship to pain. Brit. Dent. J., 94:256-60, May 19, 1953.
18. FARRELL, J. H.: Galvanic action between dental restorations. Brit. Dent. J., 104:128-9, Feb. 18, 1958.
19. PHILLIPS, R. W.: An evaluation of the problem of galvanic currents caused in the oral cavity. Ind. S. Dent. A. J., 37:8-11, Jan. 1958.
20. SCHRIVER, WILLIAM, and DIAMOND, L. E.: Electromotive forces and electric current caused by metallic dental fillings. J. Dent. Res., 31:205-29, Apr. 1952.
21. ZANDER, H. A., GLENN, A. F., and NELSON, C. A.: Pulp protection in restorative dentistry. Am. Dent. A. J., 41:563-73, Nov. 1950.
22. SILBERKWEIT, MARIA, *et al.*: Effects of filling materials on the pulp of the rat incisor. J. Dent. Res., 34:854-69, Dec. 1955.

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Cast Restorations With Baked Porcelain Incisal Edges for Fractured Young Permanent Incisors

LLOYD BAUM, D.M.D.*
JESS HAYDEN, JR., D.M.D.**
DEAN BONLIE†

FRACTURED permanent incisor teeth are esthetically unacceptable in our culture. The problem faced by dentistry is how to restore these teeth for children in an acceptable and economical manner. The most esthetic procedures heretofore employed are similar to those outlined by Hartsook,[1] Noonan[2] and Hogeboom.[3]

In the restoration described by Hartsook, retention is gained by reducing and grooving the proximals and placing a lingual pin in the cingulum. Noonan's description is essentially that of a full crown with a gold lingual and an acrylic labial, and such a preparation routinely involves the reduction of the mesial, labial and distal surfaces. If it is necessary the lingual is reduced to clear the bite. Both of the above procedures gain retention and coverage at the expense of considerable tooth structure. Hogeboom describes an esthetic and conservative restoration which consists of a porcelain incisal tip baked to cast platinum.

Recently it has been demonstrated that a restoration combining positive retention and acceptable appearance can be achieved in two chairside appointments with surprisingly little loss of tooth structure. This is accomplished through the use of a Ceramco® gold casting employing multiple miniature parallel pins with a baked porcelain incisal. The paralleling of the pinholes is accomplished by the use of a simple intra-oral precision drill jig (Fig. 1). The fabrication of dental castings to fit miniature pinholes has been described by Shooshan.[4] Although the use of miniature parallel pins in cavity preparation has many applications[5, 6, 7] this paper will consider its application to fractured incisal angles of vital young permanent incisors.

The outline form of the preparation is determined by the fracture line and the position of the mesio-lingual and disto-lingual marginal ridges (Fig. 2, 3). The lingual surface is reduced to clear the bite and the margins are carried gingivally to include the cingulum, with a chamfer producing a well defined finish line. In the case of a diagonal fracture

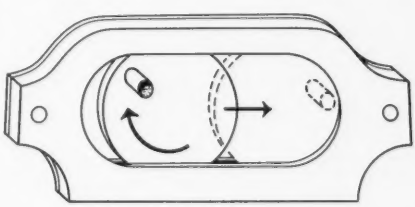

FIGURE 1. Intra-Oral precision drill jig with transparent, mobile disk. (Courtesy J.A.D.A.)

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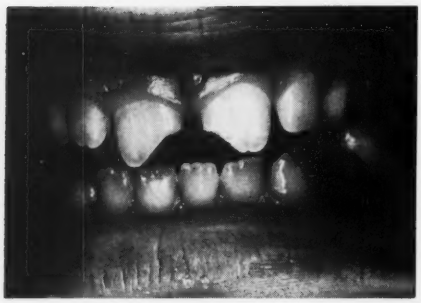

FIGURE 2. Labial view of fractured incisors, age 8.

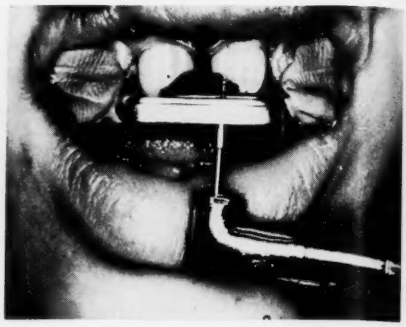

FIGURE 4. Jig in position.

all jagged edges of enamel must be eliminated in order that a clean butt joint of porcelain and enamel is produced (see Fig. 3).

To precisely determine the correct placement of the miniature pinholes the enamel is penetrated with a spear point carbide drill[8] after which the aligning jig[8] is mounted with compound. The jig should be mounted to allow the finished casting to be inserted from an incisal direction (Fig. 4). The pinholes are drilled to a depth of 2-2.5 mm. with a precision spirec drill[8] (diameter .60 mm. and length of flutes 3.0 mm.). The drill engages loosely in a miniature head angle handpiece[9] (Fig. 5). Three pinholes in the cingulum and one placed in the fracture area just labial to the pulp are sufficient to complete the cavity preparation (Fig. 3).

To obtain an impression of the preparation nylon bristles of .022 inch diameter are placed within the pinholes so that approximately 3 mm. of bristle extends from the preparation (Fig. 6). Silicone or mercaptan rubbers are the impression materials of choice; a bur box makes a suitable impression tray. After the material has congealed it is removed and poured up in conventional die stone (Fig. 7 and 8).

The stone die is trimmed and lubri-

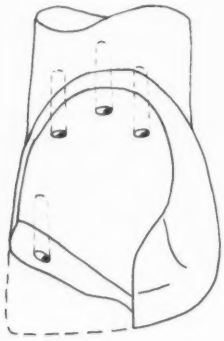

FIGURE 3. Lingual view. Note distal-incisal portion of preparation.

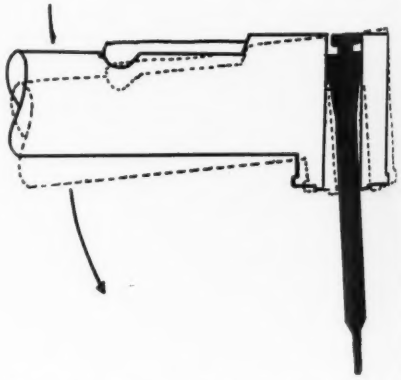

FIGURE 5. Diagram of loose fit of drill in handpiece (Courtesy, J. Periodont.).

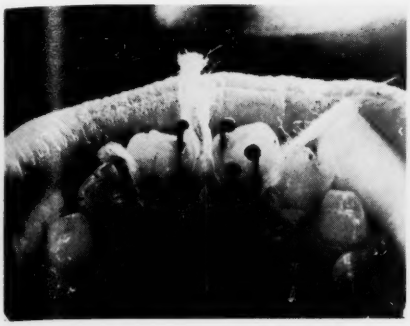

FIGURE 6. Knobbed nylon bristles inserted in pinholes for impression.

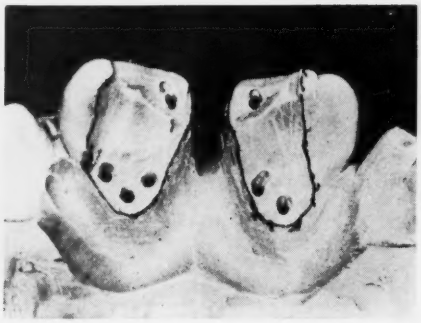

FIGURE 8. Stone die with margins trimmed ready for wax pattern.

cated and .020 inch diameter nylon bristles are placed within the pinholes after which the pattern is waxed to the desired form. The smaller diameter of bristle employed in the wax-up permits the bristles to be seated more accurately in the die, and withdrawn with the wax pattern. After removing the pattern from the die it is invested in a high fusing investment[10] and cast in Ceramco® gold.

When placing the temporary dressing it is important to protect the pinholes from cement or other foreign material. To accomplish this, short nylon bristles may be employed. The lingual surface is covered with fast setting acrylic, using the brush technic. It is very important that the "temporary" does not work loose, thereby exposing the pinholes to debris or saliva.

Laboratory Procedure for Fabricating the Porcelain Incisal

The casting is trimmed from the labial to expose a maximum amount of the labial fractured enamel and trimmed from the incisal to give only a slight ridge of gold to which a translucent porcelain incisal edge can be baked (Fig. 9).

An impression is then made of the casting seated on the die using a rubber base material. The casting is luted to the impression and is poured up in a new type of refractory porcelain investment mate-

FIGURE 7. Bristles (.022" diam.) protruding from the impression.

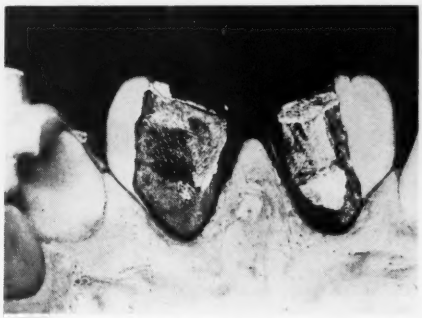

FIGURE 9. Ceramco® gold castings seated on dies ready for transfer.

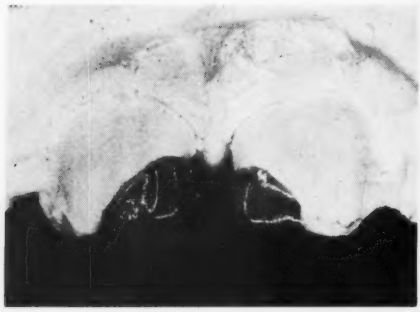

FIGURE 10. Final bake of porcelain on high fusing investment material.

rial.[10] The investment should set one hour before the impression is carefully removed, thus avoiding fracture of the friable edge of the investment. The casting which is imbedded in the investment is never removed nor dislodged until the baking operation is fully completed (Fig. 10).

The investment "model" is sectioned and the "die" prepared for firing. The first firing is done at 1800°F. to bake the opaque to the gold. After cooling, the body bake of Ceramco® porcelain is added and the 2nd firing conducted at 1800°F. The 3rd bake of 1800°F. is made after the translucent incisal is placed, emphasizing gray rather than yellow shades.

FIGURE 11. Finished castings ready for insertion. (Total weight of both restorations is 15 grains.)

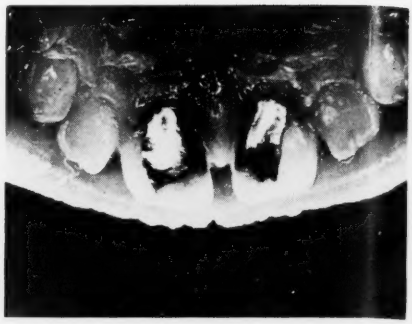

FIGURE 12. Lingual view of restorations.

The shape of the incisal portion is established and followed by a glaze of 1800°F. for 2 minutes. The investment die is broken away and cleaned from the porcelain and the gold. After pickling and polishing the restoration is ready for placement (Fig. 11).

The proper shade of Kryptex or zinc phosphate cement is used for the final cementation (Fig. 12 and 13). To insure an accurate seating of the casting the dentin or enamel around the opening of the pinholes is beveled with a No. 4 round bur.

Discussion

If the pinholes are placed in the cingulum, they will not encroach upon the pulp. In many cases it might be necessary to excise the gingival tissue covering

FIGURE 13. Labial view of restorations.

FIGURE 14. Longitudinal view of tooth after preparation.

the cingulum. Even the youngest incisors have an adequate bulk of dentin within the cingulum. However, the pulp lies very close to the lingual enamel plate in the fossa or marginal ridge area. The layer of dentin labial to the pulp is sufficiently great to permit the placement of pins underneath and parallel to the labial plate of enamel (Fig. 14).

It is difficult to obtain a good color match when an incisal angle must be replaced by baked porcelain. The baking of the porcelain directly to the investment, however, produces an exceedingly accurate labial marginal adaptation, thereby increasing the acceptability of the color match.

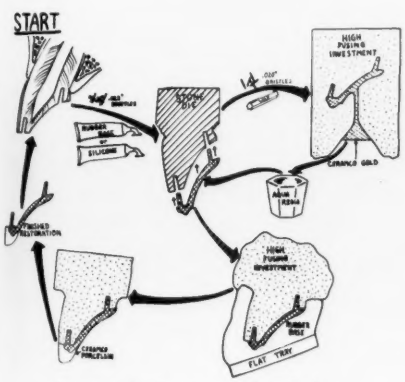

FIGURE 15. Sequence of technic.

The friable granular texture of the investment develops a hard porous consistency after the first firing. Densely packed porcelain is easily obtained by applying a "soupy" mix of porcelain to the desired area. The excess moisture is readily absorbed into the investment material.

Summary

1. A precision technic for restoration of young fractured anterior teeth with a gold and porcelain restoration has been described. The technic combines speed, durability and esthetics, as well as conservation of tooth structure.

2. A method of firing and baking the porcelain against an investment material is outlined. Accurate marginal adaptation between the porcelain and the labial enamel is obtained without the use of a platinum matrix for the firing process.

BIBLIOGRAPHY

1. HARTSOOK, J. T.: Accidents to Young Anterior Teeth. Am. Dent. A. J., 37:554-564, Nov. 1948.
2. NOONAN, M. A.: A Shoulder Preparation and Veneered Gold Jacket for Fractured Young Vital Permanent Incisors. J. Dent. Child., 4th Qtr., 167-169, 1955.
3. HOGEBOOM, F. E.: Restorative Dentistry for the Child. Am. Dent A. J., 22:323-328, Feb. 1935.
4. SHOOSHAN, E. D.: A Pin-ledge Casting Technique —Its Application in Periodontal Splinting. Dental Clinics of North American. W. B. Saunders Company, Mar. 1960, P. 189-206.
5. BAUM, L.: New Cast Gold Restorations for Anterior Teeth. Am. Dent. A. J., 61:1-8, July 1960.
6. CURTIS, G.: and BAUM, L.: New Concepts in Splinting the Mandibular Teeth. J. Periodont., 31:393-398, Oct. 1960.
7. SCHNEPPER, H. E., and BAUM, L.: Miniature Parallel Pins for Retention of Cast Restorations. J. Pros. Dent.
8. Materials available from Chayes Dental Instrument Corporation, Danbury, Conn.
9. KARLSTROM, K. A. S.: The Pontostructor Method for the Construction of Fixed Bridges, Crowns, and Inlays (Translated by V. Broxton) Stockholm, Nordiska Bokhandeln, 1955. (Available from Becker Dental Supply Company, New York, N. Y.)
10. "Ceramigold Investment" (Available from Whip-Mix Corporation). "Ceramivest" (Available from Kerr Dental Mfg. Co.)

Plaster of Paris as a Root Canal Filling Material*

IVAR A. MJØR, B.D.S., M.S.D.**

Introduction

CERTAIN favorable properties of plaster of Paris used as a bone graft have been reported,[1, 2, 3, 4] and it appeared possible that these may be taken advantage of in endodontic treatment of primary teeth.

Plaster of Paris resorbs quickly when placed in bone or soft tissue. The foreign body reactions are generally minimal. The rate of resorption of plaster of Paris when placed in a root canal has, however, not been determined. It may follow the normal resorption pattern of the primary teeth, considering that the plaster in these cases only would be exposed to soft tissue at the apical region of the teeth.

Plaster of Paris has a distinct disadvantage in that it cannot be satisfactorily sterilized for surgical use by conventional sterilization techniques without altering its setting properties. It has been pointed out, however, that sterilization may be unnecessary,[3] and many investigators with apparently satisfactory results have not sterilized the material.

Materials and Methods

Ten dogs, approximately 6 weeks old, were used in this study. The dogs were anesthetized with intraperitoneal nembutal and preoperative radiographs were taken. The incisor area was dried off and painted with iodine and alcohol. Rubber dam was found extremely difficult to work with on the small puppies and it was not used. The projecting jaws, however, made it possible to keep the field of operation dry at all times.

The three maxillary incisors on one side were operated on, and the incisors on the other side were left as controls. Access to the root canals was made through the labial surface of the incisors. The root canals were cleaned out with reamers and files in the conventional manner, irrigated with saline, dried with paper points and the length of the canal rechecked radiographically with an instrument in the root canal. A fairly thick mixture of plaster of Paris was then placed into the root canal with a lentulo root canal filler. The filling of the incisal third of the root canal was com-

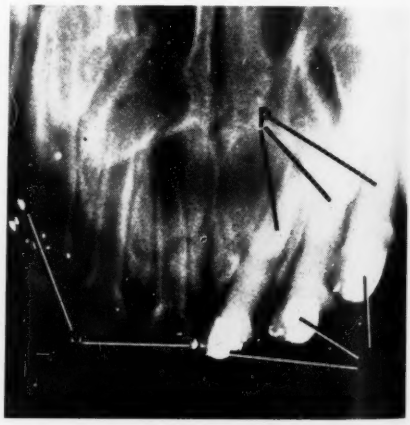

FIG. 1. Postoperative x-ray immediately after completion of the endodontic treatment. A—amalgam restorations. X—loose amalgam debris. P—plaster of Paris in root canal. (×3)

* This investigation was supported by Grant No. A-1513 from the NIH, U. S. Public Health Service, and by Grant No. 54-9869, Project 69, from the Interim Research Committee, University of Alabama Medical Center.

** Formerly of Department of Anatomy and Crippled Children's Clinic and Hospital, University of Alabama Medical Center.

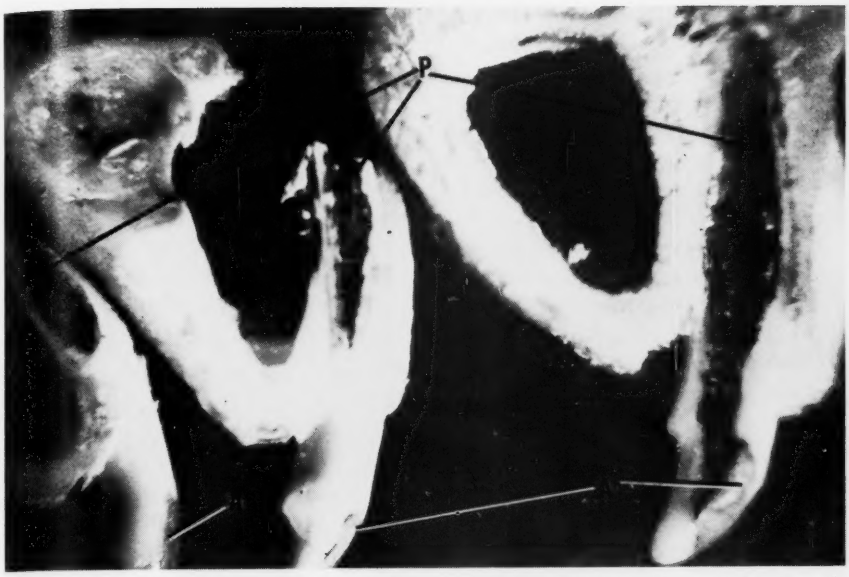

FIG. 2. Sectioned dry specimen to show plaster of Paris in situ 2 hours after endodontic treatment (same specimen as in Fig. 1). A—amalgam restoration. P—plaster of Paris in root canal colored dark to give contrast. (×5)

pleted with a root canal plugger. The canal was then closed with an amalgam restoration.

Three animals were sacrificed two, four and five weeks postoperatively, and the premaxillae containing the incisors were dissected out and fixed in Bouin's solution. These were later decalcified in 2 per cent nitric acid in 10 per cent formalin, embedded in celloidin, sec-

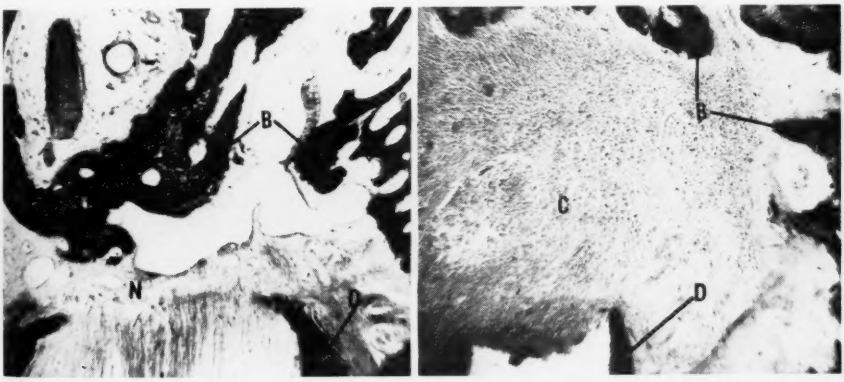

FIG. 3. Hematoxylin and eosin stained section of the periapical region of a control tooth (on the left) and an experimental tooth (on the right) 38 days postoperatively. N—normal periapical region. C—chronically infected periapical region. D—dentin. B—bone. (×175)

tioned and stained with hematoxylin and eosin for study of possible evidence of periapical pathology.

Two animals were kept until the permanent incisors had erupted to evaluate any effect on the rate of eruption or other abnormalities in the permanent teeth on the operated side.

The remaining five premaxillary segments were dissected out and cleaned of all soft tissue in a beetle colony for study of the correlation between the x-ray appearance of the root canal filling and the filling in situ.

Results

The technique used was generally satisfactory in restoring the extirpated root canal with the plaster of Paris, and a fairly good correlation was found between the x-ray appearance of the restoration and the restoration in the dry specimen. Fig. 1 shows a postoperative x-ray. The sectioned dry specimen from the same case sacrificed two hours after the completion of the endodontic treatment is shown in Fig. 2. The plaster has been colored dark with a pencil in Fig. 2 to give contrast for illustration purposes. It was found, however, that the plaster, even when placed in a root canal, usually resorbed at a faster rate than the primary tooth.

Fig. 3 shows the apical areas of a control tooth (on the left) and an experimental tooth (on the right). A marked chronically infected area is present in the periapical region of the experimental tooth. Evidence of active bone resorption has been observed surrounding the infected area.

The two cases kept until the eruption of the permanent teeth showed no difference in the eruption pattern of the permanent teeth on the experimental side as compared to the control side. It was also interesting to note that there was no clinical evidence of deleterious effects on the permanent tooth buds—even though chronically infected periapical areas presumably had been present during the calcification of these teeth.

Summary

On the basis of this experiment plaster of Paris cannot satisfactorily be used as a root canal filling material for primary teeth. Even when placed in a root canal, the resorption of the plaster precedes that of the primary teeth. As plaster of Paris cannot be satisfactorily sterilized by conventional techniques, a sterile endodontic technique is impossible. This may account for the chronic infection of the periapical areas. A tissue reaction to the plaster of Paris must also be taken into consideration and may at least partly be the cause of the failure of this material to satisfy the requirements of a root canal material for primary teeth.

Rabbavegen 38
Honefoss, Norway

REFERENCES

1. Bell, W. H. (1960): Resorption characteristics of bone and plaster of Paris. J. Dent. Res., 39:727.
2. Edberg, E. (1930): Some experiences of filling osseus cavities with plaster. Acta chir. Scand., 67:313-319.
3. Nielsen, Aa. (1944): Filling of sterile and infected bone cavities by means of plaster of Paris. Acta chir. Scand., 91:17-26.
4. Oehlecker, von (1926): Plombierung von Knochenhohlen mit Gips. Arch. f. Klin. Chir., 142:613-625.

Unit News

PRE-REGISTER for Annual meeting—Will see many of you at the Bellevue-Stratford in PHILADELPHIA on October 13-15, 1961. . . .

What are your plans for membership drives? And activities for Children's Dental Health Week? . . .

SECRETARIES . . . Please send me the name and address of the NEW State Unit reporter.

REPORTERS . . . Fourth Quarter deadline is October 25, 1961.

TINY KONIKOW

Alabama

Joe Stewart, reporter for the Alabama Unit had this to report. The Alabama Unit held its annual meeting in Mobile in April with Boyd Tarpley of Birmingham giving an excellent program on "Preventive Orthodontics." Officers elected for the coming year are:

President ..... Alton Parden, Mobile
President-Elect .. Barbara Brady, Birmingham
Secretary-Treasurer .. Joe Stewart, Montgomery

Jess McCormick of Birmingham was appointed to plan an annual workshop to be held in the Fall of each year. Under his capable leadership, the First annual workshop was held at Ann Jordan Lodge, near Alexander City, Alabama on September 8-10, 1961 with Ralph McDonald as clinician for the meeting.

Colorado

Lou Dubin reports that the Annual Seminar of the Colorado Unit was held at the Diplomat Hotel on May 12, 13, 1961. Clinicians at this meeting were John Revell, Shaftor, California who spoke on "Office Surgery Procedures for Children" and Williard Eames who covered the topics "Dry Amalgam Technic" and "Pulpotomies." Will Eames has left his private practice to accept a position on the faculty at Northwestern.

The training of dental interns at Denver General Hospital will be headed by Bill Humphrey. Twelve men will divide the year, each taking a specific phase for one month and will be available for regular consultation and help during the year. Those participating are: Joe Beaghler, Bill Cody, Lou Dubin, Ray Easley, Jack Eisenson, Will Guard, Bill Humphrey, Olaf Jacobson, Vincent Kruzick, Russ Roder, Bill St. John and Walt Zeeb.

The Unit plans to have an exhibit of an old and new dental office at the State Health Fair which will be held in November at the Denver Coliseum. Four

stages will be depicted . . . the child, growth and development, the orthodontic age, the attainment of good dentition, the oral surgical phase with loss of teeth and the prosthodontic phase with replacement of lost teeth.

Delaware

From Roland V. Reed, Jr. comes this news of the Delaware Unit. The first all day meeting of the Unit will be held in Wilmington on Friday, October 13, 1961 from 9:00 a.m. to 4:00 p.m. The featured clinician for the session will be Roy M. Wolff whose presentation will be "Education Plus Motivation Plus Performance Equals a Successful Practice of Dentistry for Children."

This all day clinic will precede the Annual meeting of ASDC in Philadelphia. The Delaware Unit extends an invitation to all members who will be in the area to attend Dr. Wolff's presentation at the Wilmington Academy of Medicine. Tickets ($15.00) for the meeting and luncheon can be obtained by writing Dr. Gilbert Kates, Professional Bldg., Augustine Cut-off, Wilmington 3, Delaware.

At the recent annual meeting of the Delaware State Dental Society, the Delaware Unit presented an exhibit entitled "The Jungle of Weeds" patterned after the original idea on this theme presented by William Demeritt. The exhibit has been made available to Delaware organizations, both professional and lay, interested in disseminating information on dentistry for children.

Florida

Albert Connin, new reporter for the Florida Unit had this to report. The Florida Unit concluded a most successful meeting at the Americana Hotel in Miami Beach, May 18-20 with Dr. Harry Sicher as guest clinician. His topic, "The Growth and Development of the Mandible and Maxilla" was very informative.

New officers elected at this meeting are as follows:

President	Charles Fain, Daytona Beach
President-Elect	John Tabak, Miami
Vice-President	Neal Powell, Orlando
Secretary-Treasurer	Tony Shows, Pensacola

Plans are underway for a Seminar to be held from November 30 through December 4, 1961 at Port-Au-Prince, Haiti. Special clinics at the University of Haiti, School of Dentistry, are being planned. All ASDC members are invited to attend and can get the necessary information by writing to: Tony Shows, 3090 Navy Blvd., Pensacola, Florida.

Vic Lenchner and Bernie Neuwirth and their committee are in charge of local arrangements for the 1962 National meeting in Miami and great plans are in the offing. A total of 98 dentists from eight states participated in the first annual Pedodontic Seminar at the J. Hillis Miller Medical Center at Gainesville, Florida. The seminar was sponsored by the Florida Unit and the Florida State Postgraduate Committee. It was so successful that a second seminar is being planned for February 1962. Plans will be announced later.

Hawaii

From the 50th State comes this report. The Hawaii Unit held its first Pedodontic Seminar in Kona, Hawaii, May 5-7, 1961. Thirty-eight dentists registered for the postgraduate course in Pedodontics with Chas. A. Sweet, Jr. as instructor.

Most of the men went to Kona together on a special flight from Honolulu. Registration started promptly at 9:00

a.m. followed by greetings from Warren T. Wakai, president of the Unit. Dr. Sweet lectured on the following subjects: "Space Management"; "Tooth Guidance"; "Pulp Management of Primary and Young Permanent Teeth"; and "Office Management, Practice Management and Patient Management." Table clinics were presented by Drs. Paul Hoe, Jacob Ing, William Nakagawa, Charles Sweet and Warren Wakai.

One of the social highlights of the Seminar was the luau on Saturday night planned by Leslie Yamanaka of Kona. Sightseeing tours both by car and boat were enjoyed along with deep sea fishing trips. There was an atmosphere of friendliness and warm fellowship among all the members throughout the seminar.

A banquet was held at Jo-Jan's Restaurant in Honolulu for the annual meeting on June 20, 1961. Robert E. Moyers, University of Michigan, spoke on "The Tongue and Its Role in the Development of Occlusion." The lecture material covered the correction of tongue habits, the physiology of tongue function, and the tongue and malocclusion.

Annual reports were made by the committee chairmen and the following officers were elected:

President	Katsumi Miyano
President-Elect	K. B. Chun
Secretary	Sanford Asahina
Treasurer	David Dung

Idaho

Donald Pape, new reporter for the Idaho Unit reports that the Montana and Idaho Units held their joint meeting on July 21-23 at Jackson Hole, Wyoming with 75 dentists attending. Guest clinician was Ralph E. McDonald, chairman of Pedodontics, University of Indiana who spoke on the following topics:

1. Restorative Dentistry for Children in All Its Aspects
2. Pulp Therapy for Primary and Young Permanent Teeth
3. Recent Advancements in Dental Caries Control
4. Restoration of Fractured Incisor Teeth

Dr. McDonald's talks stimulated considerable discussion, especially his reports on the investigations conducted by graduate students at Indiana concerning the therapeutic (formo-cresol) pulpotomy versus the vital (calcium hydroxide) pulpotomy in pulp therapy for primary teeth.

On Saturday evening, a banquet was held for all dentists and their families attending the meeting. Following the dinner, Dr. Shirley Beard of Pocatello showed films of his boat trip up the intercoast route from Seattle to Alaska. Business meetings were held Saturday by both the Idaho and Montana Units while dentists from Wyoming and Utah met with Ralph McDonald to discuss the formation of State Units.

Officers elected to serve the Idaho Unit are:

President	Charles Hanson, Nampa
President-Elect	Richard Olesberg, Coeur d'Alene
Vice-President	Milford Faylor, Nampa
Secretary-Treasurer	Mel Bowman, Nampa

Plans for the future include: increasing the membership, a joint meeting next Summer with the Montana Unit at Glacier National Park, make an effort to have at least one additional scientific session next year, perhaps, in conjunction with the Boise Mid-Winter meeting.

A very excellent report, Don. Keep up the good work!

Illinois

William S. Sherwood is the new reporter for the Illinois Unit and sends

this report. The Illinois Unit will hold its Fall meeting November 1, 1961 at the Knickerbocker Hotel in Chicago. Featured at this all day meeting will be Max Bramer and Arnold Steinberg who will speak on "The Treatment of the Handicapped Child," and Dr. Harry Sicher, well-known lecturer on "Growth, Physiology and Pathology of the Human Skull and Dentition."

Registration will be at 9:00 a.m. The pre-registration fee for members and students will be $4.00, non-members, $6.00, and includes the luncheon. Pre-registration fees can be sent to Dr. Wm. Rogers, Treas., 3233 S. Parkway Ave., Chicago 16, Ill. For additional information, contact the publicity chairman, Dr. Wm. S. Sherwood, Box 192, Libertyville, Illinois.

Indiana

From Richard H. Howard comes this news. The Indiana Unit had its Executive Council meeting at the home of President Jim Roche. Many things were discussed but the high points were the ASDC meeting and the program in conjunction with the Indiana University Dental Alumni meeting on October 6, 7, 1961 on the Bloomington campus. Also, the annual Spring Seminar to be held at French Lick was discussed, final plans to be made later.

John E. Gilster, chairman of the Department of Pedodontics, Washington University will be the guest speaker. He will lecture on "Child Psychology" and "Pulp Therapy."

Louisiana

Nice to hear from the Louisiana Unit via Vincent Liberto. This fall "Dentistry for Children in the deep South will receive a big boost due to the presentations of two outstanding clinicians."

On November 5, 1961, Clinton C. Emmerson will speak before the members of the Louisiana Unit as guest clinician for an all day scientific meeting at the Roosevelt Hotel in New Orleans.

On December 9, 10, 1961, David B. Law will conduct a two day Postgraduate course in Pedodontics at Loyola University, New Orleans. This course will be cosponsored by the Louisiana Unit and the Loyola University Postgraduate Study Committee and the fee for the course will be $50.00. Address inquiries concerning these two events to: Dr. Vincent N. Liberto, 2810 Napoleon Ave., New Orleans 15, La.

Dr. Mabel F. Wood, director of Dental Activities in the New Orleans Public Schools sent in a report of their activities covering a 10 month period which is most interesting. A dental program in each one of 119 schools was completed with special programs in many of the schools. Film showings were accompanied in their presentations by talks on Dental Health by public health nurses and dentists. Much was accomplished through this educational program. The report is extensive and those wishing copies may write to: Dr. Mabel F. Wood, Dental Division, New Orleans Public Schools, 703 Carondelet St., New Orleans 12, La.

Michigan

President Dick Christl, director of the dental section of the Oakland County Health Department, served on the special faculty of th Fifth Workshop on Public Health Dentistry held at the University of Michigan on June 19 through June 23, 1961. Two hundred public health dentists were in attendance and were from almost every state in the union. The workshop covered all phases of operation and problems connected

with a local public health dental program.

Co-chairmen Jim Happle of the Detroit District Dental Society and Dick Christl of MSDC, have announced that plans are almost complete for the Greater Detroit Children's Dental Health Day. The date is Thursday, February 8, 1962 featuring Robert Boller as essayist at the scientific section in the afternoon. Following a buffet dinner, the evening program will be geared to high school students who have demonstrated an interest in dentistry. Walter Niemann of Ann Arbor will again present his "A Career in Dentistry" program.

The committee for Children's Dental Health Day consists of Len Bartoszewicz, Bill Graetz, Bruce Jones, Pierce McLean and Don Shumaker. Past president and past co-chairman, Tiny Konikow, is giving his able assistance as consultant and advisor.

Bob Murray from Tecumseh, Michigan reports that the Fall meeting of the Michigan Unit will be held on November 8, 1961 at Jackson, Michigan. Guest clinician will be Ralph McDonald who will speak on "The Management of Deep Caries" and "Pulp Exposure in Children."

Minnesota

Ned Brown reports that the Board of directors and officers of the Minnesota

Board of Directors Meeting for Minnesota Unit. Front row, left to right: president, Ned Brown; Walt Iverson; Ray Peterson; secretary, Jerry Ulrich. Back row, left to right: Harold Wittich; Irv Posnick; All-Day September Meeting chairman, Jack Anderson; Bob Boller; Vice-president, Don Hurwitz; and treasurer, Terry McCollow.

New officers of the Minnesota Unit. Front row, left to right: Vice-President, Don Hurwitz; Past-President, Ray Peterson; Secretary, Jerry Ulrich. Back row, left to right: President, Ned Brown; Treasurer, Terry McCollow.

Unit met for a dinner meeting on June 6, 1961 and planned the coming year's agenda. It looks like another top-notch year for the Gophers as these men really came up with some tremendous ideas and have the know-how to put them over.

The annual September all-day meeting sponsored by the Minnesota Unit was held September 13 in the Mayo Memorial Auditorium at the University of Minnesota. Approximately 400 members and guests attended the very stimulating presentations of Wilton M. Krogman of Philadelphia and Walter C. McBride of Detroit. Dr. Krogman spoke on "Tooth and Facial Growth Patterns and Problems" while Dr. McBride discussed "Management of a Pedodontic Practice."

The dazzling array of talent "on deck" for the coming year promises to widen the already broad effort of the Unit in the upper Mid-west.

New Mexico

The Spring meeting of the New Mexico Unit was held in conjunction with the New Mexico State Dental meeting at Western Skies Motel in Albuquerque on May 11, 12, 13, 1961. A business-luncheon meeting was held. Isidore Voda, Vice-President of the Unit was elected president of the New Mexico State Dental Association.

Ohio

In reporting for the Toledo section of the Ohio Unit, Charles Sawyer stated that they now have 34 members and are working with the newly organized staff at Toledo Children's Hospital.

Recognizing the need for treatment of the handicapped child, the Toledo section planned their last two meetings around this important subject. On May 22, 1961, Raymond Sawusch, assistant professor of pedodontics at the University of Michigan, spoke on "Basic Pedodontic Operative Procedures" and also discussed the Hospital program at University Hospital in Ann Arbor. On May 31, 1961 Hugh Kopel of Detroit lectured to the group on "Premedication and Hospitalization for the Handicapped Child."

Harvey G. Behner, first president of the Toledo section, has returned to Western Reserve University for orthodontic graduate study and a teaching career.

Oklahoma

T. J. Guthrie stated in his report that the Oklahoma Unit held its first Summer meeting on July 15, 1961 at the 89ers Inn in Oklahoma. The meeting was a new approach for the Unit. Bill Rose and his committee did much to revitalize the organization by combining an attractive Summer meeting with a membership drive. The approach was to have an excellent speaker, an attractive meeting place and to blanket the State Dental Association membership with informa-

Left to right: Jim Torchia, Tulsa, Secretary; Bill Rose, Chickasha, President; Dick Jennings, University of Texas, Clinician; T. J. Guthrie, Oklahoma City, President Elect.

tion regarding the advantages of being a member of ASDC and an invitation to the State meeting. Jim Tonchia, secretary, worked nights getting the information out to members of the Oklahoma Dental Association. In summary, the membership drive and Summer meeting netted 19 new members and the Summer meeting is now going to be an annual affair.

Dick Jennings, head of Pedodontics at Texas University, was the clinician and gave the Unit a splendid program touching on many pedodontic problems the dentist faces daily.

Texas

They are still doing big things in the Texas Unit according to John Winkler, the new secretary. Here is what he reported. The annual meeting of the Unit was held on April 30, 1961 at the Shamrock-Hilton Hotel in Houston with the following officers being elected:

President ..... Lamarr Crunk, Houston
President-Elect .. Kenneth Cathey, San Antonio
Vice-President .. William Runyon, Fort Worth
Secretary ..... John Winkler, San Antonio

United Cerebral Palsy of Texas has awarded the Texas Unit an annual scholarship grant of $750 for training members of the Unit in techniques of restorative dentistry for palsied children. This year's award went to H. O. Simmons of Lubbock and Byron Smith of Austin. They attended a week's course in June at Columbia University.

Clinicians at the annual meeting were James Roche of Indianapolis who spoke on "Parent Management" and Joseph Muhler, who had as his topic "Topical Fluorides." The clinicians gave very excellent presentations and were well received by the members. Several officers and members of the Unit are planning to attend the ASDC meeting in October.

Washington

Bob Martin, new reporter for the Washington Unit sent this report. Belated greetings from the land of tall timber, big airplanes and a 1962 World's Fair . . . Seattle's Century 21. The Washington Unit hasn't been vocal but they sure have been active.

Robert Blancher clues Pat Fleege in on a new spacer technique.

At the Spring conference, the following officers were elected:

President	Roland Woofter
Vice-President	James Fleege
President-Elect	Robert Morrow
Secretary-Treasurer	Otto Stevens

David Law, head of the Department of Pedodontics, University of Washington, was guest clinician. He presented a statistical study on "Fractured Teeth."

The annual Spring-Summer session was again held in Yakima on June 18, 19, 1961, with Ben Lynch, dean of the Dental School at Creighton as clinician. He dealt with problems in oral surgery, pharmacology and management of difficult cases in dentistry for children. Fifty members and their families attended. Tom Lewis and Pat Fleege gave an impromptu demonstration of the proper technique for diving into a small swimming pool.

The 1961 Pacific Northwest Conference will be held September 28 through October 1 at the Surftides Hotel, Ocean Lake, Oregon. Ralph Ireland from the University of Nebraska will be guest clinician. Hope many will plan to attend and enjoy the beautiful Oregon coast in the heart of the "Twenty Miracle Miles."

Roland Woofter, president of Washington Unit thanks Ben Lynch for an outstanding clinic.

Tom Lewis and admiring females enjoy luncheon overlooking the pool at Yakima's Holiday Inn.

Leonard Suhadolnik was selected as Washington State chairman for the 1962 Children's Dental Health Week. Additional members appointed were: David Mooers, Neil Beasley, Robert Morrow and Donald Dietz.

Plans for 1962 are progressing. The annual meeting will be held in Seattle on June 24, 1962 in conjunction with the Washington State Dental Association meeting. It will take place during the Seattle World's Fair and will offer everyone a wonderful opportunity to see this outstanding science Fair.

Fran Summers will be clinician at the Pacific Northwest conference on August 25, 26, 27, 28, 1962 at the Banff Springs Hotel with the Washington Unit as host.

Thanks, Bob Martin, for your first report. . . . Excellent!

Wisconsin

Bill Sievert did a nice job of reporting the news of his Unit. Here is his report. The annual Spring meeting of the Wisconsin Unit was held at Fazio's Supper Club in Milwaukee on Sunday, April 23, 1961. Approximately 75, including eleven new members attended and were re-

warded by hearing a most interesting speaker, Quinton E. Williams of Corpus Christi, Texas, who covered many aspects of pedodontics. Most unique and interesting were the uses of indicator dyes in personal oral hygiene for children and castings of silver alloy for primary and permanent teeth.

New officers elected at the meeting were:

President ..... E. A. Fetting, Appleton
President-Elect .... James Molone, Wauwatosa
Vice-President ..... Ed Merkel, Wausau
Secretary-Treasurer .. W. J. Sievert, Milwaukee

The Fall meeting which is an all day session will be held in Wausau on October 8, 1961 with Tiny Konikow of Royal Oak, Michigan as guest clinician.

Congratulations are in order for Perry Cohn and Russ Brown, members of the pedodontics department of Marquette Dental School for "sparking" new interest in pedodontics among the undergraduates and for their efforts in enrolling 32 new student members.

Thanks, Bill, for your first bit of reporting. Keep the news coming.

Kenneth A. Easlick Graduate Society

The third biennial conference of the Kenneth A. Easlick Graduate Society was held in Ann Arbor at the W. K. Kellogg Foundation Institute, May 15, 16, 17, 1961.

Dr. and Mrs. Easlick started the conference by inviting all of the Society members and their guests to their new home for a cocktail party.

Approximately fifty members and guests attended the three day conference and heard talks by Drs. Harry Sicher and Joseph Muhler. Graduate students at the University of Michigan presented research reports and three panel discussions were conducted by various members of the Society.

Officers elected for the two year term were:

President ..... Zalman Konikow
President-Elect ..... Laren W. Teutsch
Secretary-Treasurer ..... Henry M. Wilbur

Members and guests at the Third Conference of the Kenneth A. Easlick Graduate Society in Ann Arbor, Mich. First row, left to right: president, Samuel Stulberg, secretary-treasurer, Laren W. Teutsch, Philip Jay, Kenneth A. Easlick, Joseph Muhler, Harry Sicher, vice-president, Z. Konikow.

The Society meets every two years at the University of Michigan to study new developments in Dentistry for Children and to honor their beloved teacher, Kenneth A. Easlick.

Internship

Inquiries regarding the following internship should be addressed to: C. Christiansen, Administrator, The Children's Hospital, Inc., 3825 Greenspring Ave., Baltimore 11, Maryland:

The Children's Hospital of Baltimore is accepting applications for a full time intership to begin July 1, 1962. The internship is of the rotating variety and will stress dentistry for the handicapped, and the use of general anesthesia in complete dental service.

The training will be given with the cooperation of the Department of Pediatrics of the Johns Hopkins Hospital, and is being supported by a grant from the Children's Bureau of the United States Department of Health, Education & Welfare.

Course

Address inquiries concerning the following course to: Dr. L. Walter Brown, Jr., Director, Post-Graduate Refresher Courses, Tufts University School of Dental Medicine, 136 Harrison Ave., Boston 11, Mass.:

Dentistry for the Handicapped Child, October 2-5, 1961.

Program chairman and co-ordinator for this course is Dr. M. Michael Cohen, Boston, Mass.

This course has been designed to acquaint the dental practitioner with the philosophy and method of modern rehabilitation that combines the knowledge and skills of all the appropriate professions in building a handicapped person up to his maximum physical and mental power. In this way the handicapped may become useful, self-sufficient and reasonably well-adjusted members of our society.

Lectures will be given to acquaint the dental practitioner with the oral conditions in cerebral palsy, muscular dystrophy, multiple sclerosis, mental subnormality, cleft palate, and handicapping conditions in chronic illness.

Methods of dental treatment in the dental office and mouth rehabilitation employing general anesthesia will be discussed and demonstrated.

The specific aim of this postgraduate course is as follows:

1. To encourage the dental practitioner to treat physically and mentally handicapped persons with the highest standards of dental care.
2. To encourage the dental practitioner to cooperate with private and public health agencies in providing dental care for the handicapped in general rehabilitation programs.

Graduate Training

For information regarding the graduate program, please write: Dr. W. G. Goodale, Head, Department of Preventive Dentistry and Pedodontics, University of Iowa, Iowa City, Iowa.

There are two programs available for graduate dentists. The first one is primarily for those students wishing to become more proficient in the treatment of children, but who probably will not limit their practice. At the completion, a certificate is issued to the dentist. The second program is designed for those students wishing to receive a master's degree in pedodontics.

The Department of Pedodontics is fortunate in having a well-designed clinic with double operating stools, vacudents, spray attachments for the handpieces, etc. together with a chairside assistant to

train with. The department enjoys an excellent relationship with personnel of the University Hospital School for Severely Handicapped Children where a children's clinic is maintained for the training of graduate students. Facilities are also available in the General Hospital for the use of general anesthesia in the operating rooms for complete rehabilitation of the mouths of children such as the mentally retarded, the severe cerebral palsy patient and others who cannot be treated in a clinical situation.

Didactic training is carried out in this department and other departments of the University, under the direction of the graduate college.

Course Announcement

For information and application blank for the following courses, please write: Postgraduate Education Program, First District Dental Society, Statler Hilton, New York City, N. Y.:

Preparation of Teeth for Jackets for Abutment Purposes ... Dr. I. Franklin Miller—Oct. 5-7
Newer Concepts in Restorative Dentistry ..... Dr. Alexander Leff—Oct. 18-19
Occlusal Adjustment-Integration into the Practice of Dentistry ..... Dr. Julius N. Obin —Oct. 18, 1961
Oral Dynamics ..... Dr. John T. McSweeney —Oct. 19-21, 1961
Horizontal Pinsplinting of Anterior Teeth ... . Dr. A. J. Feldman and Dr. Carl Sanell —Oct. 27-28

* * *

For information regarding the following courses, please write to: The Chairman, Division of Postgraduate Studies, Faculty of Dentistry, University of Toronto, Toronto, Ontario, Canada.

Occlusion and Occlusal Correction ..... Oct. 16-20, 1961
Pedodontics ..... Jan. 8, 9, 1962
Anatomy: Normal and Pathological ..... Feb. 7-9, 1962
Endodontics ..... Feb. 28-Mar. 2, 1962
Orthodontics ..... Mar. 5-9, 1962
Oral Surgery ..... Apr. 23-27, 1962
Periodontics ..... May 7-11, 1962

Graduate courses in dentistry, leading to specialist certification in the fields of Dental Public Health, Dental Oral Surgery and Anaesthesia, Orthodontics, Pedodontics and Periodontics are also offered by the University of Toronto. Programs of education and research leading to graduate degrees in the biological sciences related to dentistry may also be arranged.

* * *

For information concerning the following courses, please write to: Dr. L. Walter Brown, Jr., Director, Post-Graduate Refresher Courses, Tufts University School of Dental Medicine, 136 Harrison Ave., Boston 11, Mass.:

101 A Dental Care for the Handicapped Child ..... Dr. M. Cohen & Staff—Oct. 2-5
301 A Hospital Management of the Dental Patient, Dr. Richard Taylor—Feb. 7-9, 1962
401 A Orthodontic Principles of Interest to the General Practitioner .... Dr. Shapiro & Staff—6 Wednesdays beginning Feb. 28 to April 4
302 A Minor Oral Surgery ....Dr. Richard Taylor & Staff—May 8-10
100 A Children's Dentistry for the General Practitioner ..... Dr. Sidney Finn —May 21-23, 1962

* * *

For information regarding the following courses, write to: Dr. Ernest L. Banks, Director, Postgraduate Education, Emory University School of Dentistry, 106 Forrest Ave., N.E. Atlanta 3, Georgia:

127 Philosophy of a Successful Dental Practice .....Dr. Robt. O. Jones—Nov. 13-14, 1961
128 Oral Surgery ....Dr. H. J. Harpole & Staff—Dec. 6-8, 1961
130 Treatment Planning & Designing of Partial Dentures ....Dr. Lynn Dirksen & Staff—Feb. 22-23

131 Pulpal Reactions to Operative Procedures and to Various Filling Materials, Caries & Caries Control in Children and Adults—A New Concept, Dr. Maury Massler—Mar. 2-3

* * *

For information concerning the following postgraduate courses, write to: Dr. Wm. Mann, W. K. Kellogg Foundation Institute, University of Michigan, Ann Arbor, Mich.:

* * *

Light Differential Forces in Orthodontic Treatment ..... Oct. 9-11, 1961
Higher Speeds for Rotating Instruments ..... Oct. 26-27, 1961
Dental Treatment for Handicapped Children ..... Nov. 13-14, 1961
Minor Oral Surgery ..... Nov. 27-Dec. 8, 1961
Practice Administration for the Orthodontist ..... Dec. 4-6, 1961
Guiding Occlusal Development—A Course in Interceptive Orthodontics for the General Practitioner ..... Dec. 4-15, 1961
Control of Apprehension and Pain in Dentistry for Children—A Course for the Family Dentist ..... Dec. 11-12, 1961
Dentistry for Children ..... Feb. 26-Mar. 9, 1962
Clinical Dental Hygiene (For Dental Hygienists) ..... Feb. 28-Mar. 2, 1962

Announcement

At the ad-interim meeting of the Executive Council of ASDC in Chicago, Al Anderson presented a preliminary report from the Special Public Relations Committee. This report entailed information on activities of public relation firms and the value of a coordinated and effective means of channeling publicity in the expansion of dental health education. It was apparent to the Executive Council that consultant services could be of tremendous value to ASDC and to dentistry for children.

Although the value of professional public relations assistance was evident there was a real question about whether ASDC was now in a position to afford these services. One of the main reasons for the dues increase was to make possible an expansion of health education and public relations activity. Nevertheless, the expenditure of monies for such a program must be carefully evaluated by the Executive Council before final action can be taken. The special Public Relations Committee consisting of Albert Anderson, chairman, Harold Addelston and Alfred E. Seyler, was asked by the Council to further investigate the possibilities of a public relations program and make recommendations to the meeting of ASDC in Philadelphia.

Material intended for the Unit News should be sent to Tiny Konikow, 26789 Woodward Ave., Huntington Woods, Michigan. Deadline dates: First Quarter, January 25; Second Quarter, April 25; Third Quarter, July 25; Fourth Quarter, October 25.

Intravenous Anesthesia in the Pediatric Ambulatory Patient

A. A. Conte, M.D.
L. E. Dietz, D.D.S.

THE following report is submitted to illustrate the practicality and safety of intravenous barbiturate anesthesia for children (as well as adults) in the properly equipped office.

Objectives

To provide the means by which comprehensive dentistry on uncooperative children may be performed safely in the office in a one session procedure, avoiding restraints which might result in an emotional barrier towards dentistry.

Materials

The records of 592 patients treated over a two year period in a pediatric dentist's office were analyzed. These patients ranged in age from 14 months to 12 years and included emotional children, retardates, and the physically handicapped.

Procedures

All children were evaluated for this procedure by the dentist and the anesthesiologist. Where indicated, the family physician was consulted.

Each child was premedicated orally at home with sodium butisol (gr. ½ to 1½) and atropine sulfate (gr. 1/150) one hour before appointment.

Anesthesia was induced with 2.5 per cent sodium thiopental. A single injection of 6-10 cc (150 mgm.-250 mgm. of sodium pentothal) provided sufficient hypnosis for the patient to tolerate a nasal mask for the administration of 80 per cent N_2O and 20 per cent O_2. (Heidbrink Simplex gas machine—pressure 7-10 MM Hg. and N_2O 4-5 liters per minute.) Within one minute the respiration rate and rhythm returned to normal, a mouth prop inserted, the naso-pharynx packed with gauze (wet 4 x 4), and a local anesthetic (Unicaine HCl with epinephrine 1:60,000) was injected into the operative area.

Observations

1. Oral premedication was tolerated even by the youngest children when the tablets were crushed and mixed with sugar and water.

2. Dosage of sodium butisol per body weight usually provided a cooperative and alert child.

3. Atropine sulfate gr. 1/150 resulted in optimal dryness of the mouth without excessive tachycardia or a significant rise in body temperature. "Atropine flush" was observed only on occasion.

4. The selection of a vein (usually antecubital or one on the dorsum of the hand), the use of a 22 gauge 1″ disposable needle, the distraction of the child and immobilization of the arm by the auxiliary personnel, and the rapidity of action of sodium pentothal allowed the patients little time for apprehension.

5. In this series of 592 patients, only 2 cases proved unsuccessful with this method due to difficult venipuncture. Both children were under 3 years of age and became more apprehensive and unmanageable with each attempt. Twenty-three cases required more than one ven-

ipuncture, but induction was successful.

6. Proper positioning of the anesthetized patient's head and careful packing of the mouth are mandatory in establishing a patent airway and a safe, uneventful maintenance of a very light plane of anesthesia. In only 4 cases was it necessary to use a nasopharyngeal tube to secure on unobstructed airway.

7. A dry, open mouth provides the dentist with an ideal operative field. In 592 children, 6,388 amalgams and 72 crowns were placed, 164 extractions and 283 pulpotomies were performed.

8. This method of balanced anesthesia carries the patient on a light stage, so that his recovery is rapid, nausea is seldom encountered, and dismissal from the office is within one hour.

9. The advantages of this method are:

a. Non-explosive anesthestic agents
b. Dry field with maximum exposure
c. No loss of time due to behavior problems
d. Good dentistry even for handicapped children
e. Full mouth restoration completed in one session
f. Virtual elimination of fear of the dentist
g. Optimal safety comparable to hospital conditions
h. Rapid recovery and early ambulation
i. Total cost slightly higher than for the cooperative child, but substantially lower than for the hospitalized patient
j. Affords the dentist the benefits of his special office equipment and personnel which cannot be duplicated in the hospital.

10. Disadvantages of this method are:

a. Average office does not have adequate hospital-type anesthetic and recovery room facilities.
b. Failure of venipuncture upon first attempt results in loss of cooperation of the child.
c. Due to the superficial depth of anesthesia, proper positioning of the head and proper packing of the mouth are essential to avoid hypoxia and gag reflex activity.
d. Nausea and longer recovery period resulted from sessions of more than 75 minutes.

11. A graphical study indicates that the children who returned to the office for the periodic six months examination had an average reduction of new decay from 11.8 to 0.2 surfaces per child over an eighteen month period. An average reduction of extractions from 0.7 to 0.03 per child was noted. Only 10.99 per cent of the children required a general anesthetic on the six month session and none thereafter.

These results emphasize the value of comprehensive dentistry including prophylaxis, topical fluoride therapy and proper toothbrush instructions.

We feel that the one-session procedure starts the patient on a new dental program without unpleasant memories; it establishes a rapport between the dentist and the child that makes it possible for subsequent carious lesions to be properly restored without any type of anesthetic.

Summary

A safe, economical, and practical use of anesthesia has been successfully applied on nearly 600 pediatric dental patients. This method which is applicable to many other office surgical procedures depends on the rapport established between the operators and the patient, a successful venipuncture, and the cooperation between the operator and the anesthesiologist in securing and maintaining a patent airway.

1607 Third St.
Beaver, Pa.

Psychological Approach to Mental Retardation in Dental Practice*

JOHN R. KLEISER, PH.D.**

Epitome

An attempt is made in this paper to pose a variety of suggestions for the dental treatment of mentally retarded children from the point-of-view of a psychologist. Some of them might not be practical in a particular situation, but if there is some stimulation to seek variation in technique and to encourage a second look at the psychological problems in the dental treatment of retarded children, a high purpose has been served.

This is the type of paper we feel you should read comprehensively and that even though you may never see a recognized mental retardate in your office, you will find several worthwhile suggestions which you may use in your everyday practice.

A.E.S.

Introduction

AT first glance, the relationship between the disciplines of dentistry and psychology would seem to be somewhat obscure, but within recent years there has been a growing awareness that many of the problems encountered in dentistry have a great many psychological implications. There is, in fact, an increasing body of literature which suggests a rather direct connection between these two areas. Schwabacher (1958) made extensive case studies of patients with rampant dental decay with emphasis on interpersonal factors. Moulton (1955), McCartney (1951) and Album (1956) have considered various aspects involved in the psychosomatics of dentistry suggesting many direct and indirect oral consequences of psychological experiences. There is, in addition, some experimental evidence in this respect; Manhold (1953) and Manhold and Hafner (1958) by means of a large number of varied tests, comparing psychiatric and non-psychiatric patients, measured relationships between certain personality traits, and decayed, missing and filled teeth. Although such relationship seems to exist, the underlying psychological significance is somewhat obscure at this point.

Another area of psychological significance has been suggested by Savitt (1956) (1957) who reports on the complexities of the patient-dentist relationship arising out of psychoanalytic observation of dentists and their patients. This interpersonal problem was also touched upon by Brechstein (1957) who remarked, "A more complete understanding of the total subject of personality is advocated for dentists who are in close contact with patients who display aberrations."

An even more apparent illustration of overlap between psychology and dentistry is consideration of the fact that one of the most prevalent problems in dentistry has to do with the difficulties in dealing with the emotion of fear encountered in patients. Shoben and Bor-

* Delivered at the Second Workshop on Dentistry for the Handicapped Patient with Emphasis on Mental Retardation, at the University of Pennsylvania School of Dentistry, January 10, 1961.

** Director of Clinical Psychology, The Devereux Foundation, Devon, Pennsylvania.

land (1954) in comparing 15 fearful with 15 non-fearful dental patients found confirmation of only 2 out of 11 hypotheses and both of these were related to unfavorable family attitudes toward dentistry. They concluded that, "Rather than being specific to the dental situation, dental fears seem to have their sources in the interactions of the developing individual with his parent and other significant persons." Perhaps it would be interesting for a moment to speculate as to why the fear of dental treatment seems to be so much out of proportion with the actual danger and pain involved. Freudian psychology emphasizes the importance of oral experiences during infancy in the psychosexual development of the child. The oral receptive stage is closely followed by the oral aggressive stage which is heralded by the appearance of teeth. Residuals and elaborations of these early stages are found to have basic importance and interpretation in psychiatric and psychological circles. Thumbsucking and bruxism are two examples of oral receptive and oral aggressive residuals respectively which also have consequences from the dental point-of-view. Perhaps it is possible that treatment of the teeth in later life arouses rather deep unconscious fears related to these early oral experiences.

A final illustration of the relation between psychology and dentistry lies in the use of hypnosis as a treatment technique which is well documented and represents a significant recent development in the relation between psychological and dental disciplines.

Mental Retardation

Since the particular concern of this workshop has to do with the dental treatment of mentally retarded children, some further elaboration from the psychological point-of-view seems in order.

It has been estimated that approximately 3 per cent of the population can be classified as mentally retarded. Of these, about 2.5 per cent are considered to be educable; that is, they are able to learn some academic work at an elementary level and some of this group are able to develop vocational skills and attitudes, through careful training, to the degree that they are able to be partially or fully self-supporting. About .4 per cent are found to be trainable; that is, they are not able to absorb academic work or to develop significant vocational skills, but they are able to learn to care for their own personal needs such as dressing, bathing, feeding, etc. Finally, about .1 per cent are found to be dependent; that is, they need complete physical care as infants for life. This subdivision into the educable, trainable, and dependent classifications seems to be replacing gradually the classical and somewhat comparable categories of moron, imbecile, and idiot with their rather unfortunate semantic connotations.

Previous observations in the dental literature have tended to emphasize the so-called clinical types of retardation, such as mongolism, hydrocephalus, etc. While these are the more dramatic types of mental retardation and possibly involve more severe dental problems, it is likely that the greater number of retarded children fall into the groups which are referred to as brain-injured or brain-damaged. These children are retarded as a consequence of damage to the brain as a result of birth trauma, accident or disease. The actual causes of such neurological damage are legion, including some infectious diseases such as German measles, syphilis, malaria, etc., during the early months of pregnancy;

injury to the embryo as a result of a fall or blow; injury at birth as a result of anoxia, mechanical difficulties, and prematurity, and damage after birth as a result of cerebral infection (encephalitis, meningitis, scarlet fever, etc.) or severe head injury. Some of these medical sources of neurological damage were well described in the previous workshop, by Kennedy (1958).

Many of the children who previously were considered to be retarded on an hereditary basis are now considered to be one of this group of children. Indirect hereditary effects such as RH incompatibility and certain endocrinological disturbances sometimes play a part but apparently in a smaller proportion of cases than was earlier considered to be true.

The symptoms resulting from this kind of injury vary considerably with the particular child, but frequently encountered are poor motor coordination, visual difficulties, hyper-activity, speech deviation, and of course, intellectual retardation. Related conditions, apparently depending upon the area of organic damage, are seen in the cerebral palsied and epileptic children. Brain-injured children are frequently diagnostic puzzles, especially in relatively mild cases. Apparently diffuse brain damage sometimes does not show up in electroencephalograms or as obvious neurological signs and can be presumed only on the basis of history, behavioral observation, and psychological tests.

In dealing with mentally retarded children, one of the most important principles is that greater success is likely to be attained if they are treated at their mental age level rather than at their chronological age level. Adults are likely to treat children in accord with their physical appearance and their chronological age. With mentally retarded children, one of the outstanding aspects is that the intellectual level is below expectations for the chronological age and, in many cases, not in accord with physical size or appearance. Therefore, adults need to change the frame of reference in which they operate toward such children. The estimation of a mental age is a consequence of testing and observations by qualified individuals. One complication is that the mental age represents a considerable simplification especially with retarded children who frequently display a great deal of variation in particular intellectual areas. Also, one of the frequent criticisms leveled against intelligence tests and their mental age scores is that results are likely to vary from time to time depending upon the condition of the child and the circumstances of testing. While this is true to a certain extent, repeated testing plus the observations of a qualified psychologist can supply a great deal of information about what expectations can be placed on the child. At least such tests give some indication of the intellectual level at which the child was operating at the time of testing.

Although some idea about the child's capacity is valuable in dealing with mentally retarded children, the crucial problem which is frequently faced by dentists trying to deal with such children is not the intellectual retardation per se but, rather, the emotional disturbance which may accompany such retardation. It should be recognized that mentally retarded children are probably more vulnerable to emotional disturbance than normal children but, in addition, they are subjected to a great deal of pressure relative to their own condition. The point is that retarded children are generally treated as normal children for

some time until the parents become aware of the problem and this may be remarkably late in their lives. This means that many of these children are faced with being required to live up to expectations which they are not capable of meeting. This pressure which would have a salutary effect upon normal children may have devastating effects upon these handicapped children. Even when parents and educators become aware of the retardation in these children, they are faced with normal expectations from the general public. In addition, the parents have the very difficult problem of making an emotional adjustment to having a retarded child with all the social, economic, and psychological implications which this involves. This adjustment may run the gamut from rejection to over-protection of the child, from denial of the problem to over-involvement, from complete resignation and permissiveness to rigid authoritarianism. The problem of being a good parent to a retarded child is a difficult one indeed. Fortunately, in recent years there has been a great deal more public understanding of this problem and therefore less of the cruel misunderstanding with which parents of these children previously were faced.

In any case, by the time a retarded child reaches the dental chair, the dentist may have on his hands a whole complex of emotional reactions in the child and the parent with which he is called upon to deal. A straightforward account of these various problems is afforded in a recent book by French & Scott (1960).

In the face of the complexities involved, it would seem that, ideally, dental care of such children should be made within the framework of a multidisciplined approach with the dentist operating as one member of the habilitation team. This goal will probably not be reached for some years for most retarded children and, in the meantime, members of the dental profession will have to struggle with the difficulties which these children present in treatment.

Office Management

With this background in mind, consideration can now be given to the actual problems involved in the office management of the retarded child. It should be recognized that these are suggestions from the point-of-view of the psychologist and not empirically proven techniques in this specific situation.

It should be recognized at the outset that the dentist has little or nothing, intrinsically, that is attractive to the retarded child, or to a normal one, for that matter. The abstract concept of good oral health has no meaning for him, and his willingness to go through the necessary procedures is based upon his desire to please his parents or the dentist. Compounding the problem is the fact that the dentist is under the necessity of fighting against an unfavorable stereotyped image in the public mind. In the child's life, the dentist, as portrayed in television, cartoons, and popular "humor," as well as in parents' attitudes, is certainly far from favorable. Operating against such odds, the dentist, if he is to be successful in working with retarded children, must exercise a high degree of flexibility and ingenuity. He must be willing to deviate from the efficient and routine procedures which he has already developed in his office practice for the purpose of servicing normal adults. He must be stimulated by the hope of achieving a difficult goal in the face of considerable frustra-

tion. To some individuals, this kind of prospect is interesting and stimulating; to others, it is irritating and annoying. There is not much relationship to be expected between the talents involved in a high degree of technical dental skill and the psychological characteristics necessary to deal with deviant individuals.

In short, the personality of the dentist should have a great deal to do with whether or not he works with retarded children as well as with other handicapped individuals. Some specialization in this respect seems indicated and the dentist who recognizes in himself talents in other direction, should refer such children to colleagues who wish to undertake this kind of practice. This is only fair to both the dentist and the child.

One of the ethical questions which arise from this kind of specialized practice involves the question of setting fees, since such treatment is bound to be time-consuming. It would be presumptuous of a psychologist to enter into deliberation in this respect except to point out that related conflict or frustration within the dentist could unconsciously affect his feeling and attitude toward the child.

The first step in working with such children is to gather information about the particular child. This has traditionally been done by interviewing the parents at the time of the first visit. Because of the complex problems involved, other techniques and variations might be considered. One possibility would be an interview with the parents before the child is brought, and another would be to visit in the home. In these days, the parents of retarded children are frequently subjected to repeated history-taking by the various individuals and agencies which deal with such children, so that it might be well to consider tapping other sources of information to spare the parents, and also to obtain a more objective evaluation. Many such children attend special schools of various kinds and the teachers and principals of such schools would probably be willing to supply information at the request of the parents. Also, these children have frequently been studied in clinics and by professional individuals and, with release from the parents, these agencies would very often be willing to send written reports containing summaries of their studies. This kind of inter-disciplinary service is common in other respects and could very possibly also be extended in greater degree to the dental profession. It should be recognized by dentists that taking of histories, making behavioral observations, and evaluating such children are the jobs of other disciplines and, while the dentist may have to do some of this for himself in the practical situation, he should rely on people trained in these skills when they are available to him, just as other disciplines depend on him to do effective dental evaluation and treatment.

Following the gathering of information, the next logical step would be the preparation of both the parents and the child for the child's first visit. Since the attitude of the child toward the dentist is very often influenced by the attitude of the parents, it becomes advisable for them to be made aware of this and for them to be given some help in adopting a positive attitude. As far as the child is concerned, consideration might be given to the use of commercial books or comics designed to prepare the child for dental treatment. Such material could be given to the parents to read to the child if he were able to understand.

It is not known how much of this kind of material is available although some is known to exist and others will probably be developed in the future. A medical kind of preparation which should be considered is pre-medication. This has been advocated and elaborated upon by Album (1957) and Album, Davies and Gelman (1958).

It might be well now to consider some general principles which may be applicable in the dental situation. It would seem advisable for the dentist to go quite slowly in the treatment process with these children. It would seem likely that more could be lost by going too quickly than by going too slowly. In scheduling appointments for these children it might be well to think of longer times than normally would be the case. Also, consideration might be given to setting up blocks of time, preferably in the morning, reserved for the treatment of difficult cases. This kind of scheduling will avoid the frustration which is likely to occur to both the dentist and the child if appointments are running behind schedule. It would seem likely that the use of local anesthesia with these children should be advocated. The techniques for doing this have been outlined by Album, Davies and Gelman (1958). The use of such anesthesia or any treatment at all for that matter should not be attempted until the dentist is sure that the child is ready to accept it. It would seem advisable for a dentist to be honest with the child and explain what he is about to do to him at his level of comprehension. However, he may wish to consider avoiding the use of words which carry with them highly charged emotional content, such as "hurt," and "pain," and substituting such words as "twinge," "buzzing," etc., which can carry the meaning without the negative connotation.

It would seem wise for the dentist to avoid setting up the situation in which he involves himself in a struggle of will with the child. Although dental literature records the technique of subduing a child by holding a towel over his face, the trauma of such an experience in the child made vulnerable by mental retardation could very well precipitate emotional disturbance of some consequence.

There has been some recent experimental work to suggest that particular kinds of music are helpful in dealing with retarded and disturbed children. The use of records, particularly children's records, might be helpful during the treatment process. The child could be permitted to pick out the records he wished to listen to during treatment and perhaps an earphone arrangement would help to reduce the apparent sound of the dental drill. One word of warning might be inserted here. Many brain-injured children become disorganized under the impact of too much sensory stimulation and, in some instances, simplification of the noises, lights, and articles in the visual field may be advisable.

One of the management considerations is whether or not the parents should be present in the room when the child is examined and treated. This will, of course, vary considerably with the condition and age of the child, but it is suspected that, where possible, a less complicated situation will exist if the parent is not present. Very often the parent-child relationship with these children is complicated and sometimes emotionally charged, and this may interfere with the situation. With very small children, or in instances in which the child

demonstrates significant anxiety at the prospect of being separated from the parent, it may be best to allow the parent an unobtrusive place in the room.

One variation which may be considered in certain instances would be for the child to be brought by a fond relative, a teacher, or a staff member in the case of institutionalized children. This may represent a person on whom the child could depend but without the deep emotional involvement that is likely to be present with a parent. The dental hygienist might also be helpful in taking the role of the "good mother" in helping the child become accustomed to the dental procedures. In order for her to do this she should have some training in the general area of retardation. Small children especially seem to respond better to a female and, of course, the hygienist is able to be more openly affectionate toward the child than could a male dentist, in conformity with her feminine role. This raises the unresolved side question as to the relative success of male and female dentists in working with problem children.

This first visit of the child to the dentist's office assumes particular significance and there are some possibilities for flexibility and variation in relation to it. For instance, it might be advisable for the dentist and his hygienist to abandon, for this meeting and possibly subsequent ones, the wearing of white coats. The goal of this first meeting and possibly some subsequent ones should be the establishment of a good rapport between the dentist and the child and not examination or treatment of his teeth. Particular care should be taken in introducing the child to the operating room with its array of fear-inducing equipment. It may be that this introduction is not advisable on the first visit. Examination of the child's mouth, whether done on first or later visits, might be done at least superficially in places other than the operating room, such as the waiting room, or the dentist's office. He might consider holding the child on his lap or even sitting on the floor with small children.

It would seem well to introduce dental instruments and equipment by allowing the child, where feasible, to handle and play with them. Consideration might be given to having some old and non-injurious instruments available as playthings. As the child becomes familiar with these, to him, strange implements, he will be less fearful of their use.

The widespread practice of giving children prizes seems to have some merit, but these prizes should be given on each visit and should not be dependent upon the child's behavior in order to avoid situations in which bribery becomes the paramount means of management. Since the establishment of rapport depends in part upon the dentist's expressing positive feelings toward the child, it may be that some kind of feeding (which is, of course, the earliest form of affection) might be a possible technique. Milk (with its high symbolic value) and cookies might be a possibility.

Incidentally, the area of feeding is an example of conflicting advice arising out of different disciplines so that parents are advised by dentists to avoid sweets, by physicians to provide a balanced diet, and by psychologists to consider the emotional values of food. This is not the place to resolve the many cross-currents involved, but the dentist should be aware that there is a network of emotional factors in the feeding of children and that there may be disturbances

in this respect with retarded as well as other children. Dietary rules designed to promote oral health should be tempered by consideration of the total personality involved.

Gradually, as the child comes to trust and like the dentist, he will be willing to accept more and more treatment. It should be recognized that some of these children cannot be treated in the dentist's office and when a variety of techniques have been tried and failed, it may be necessary to abandon such attempts. It may be advisable for the child to be hospitalized and dental work done under general anesthesia. Part of the dentist's goal should be the identification of such cases. It would seem best that, aside from any medical considerations, such radical treatment should not be done in the dentist's office because of the way in which the image of the dentist would be changed in the minds of parents and children who are treated by him.

Institutional Management

Finally, it may be well to consider the particular problems involved in the institutional management of retarded children. Many of the previous suggestions are applicable also in institutions, but a slightly different problem is encountered there. It was the speaker's good fortune to attend the London Conference on the Scientific Study of Mental Deficiency held in England in July of 1960. At that conference, McFarlane (1960) presented a paper on the dental health in hospitals for the mentally defective. In two English hospitals he found that 68.6 per cent of those in residence needed treatment, and that 62 per cent had significant periodontal disease. With proper treatment under the direction of the dentist as a member of the rehabilitation team, it was possible to reduce the percentage of periodontal disease to 12.5 per cent.

He described certain equipment which he had developed for institutional use; one was a wall toothpaste dispenser which was easier for mentally defective children to operate than other means, and one of the psychological approaches which he used was to change the flavor of the toothpaste in these dispensers once a month. He had also developed a kind of beaker and hose arrangement for the nurses to rinse out the mouths of dependent children following meals, and also a sterilizer for toothbrushes.

In conversation with him, he related that when he was assigned to hospitals for the mentally retarded under the National Health Act, he found a very poor state of oral hygiene which was traditionally the condition of such patients in many countries. At the outset, he adopted the policy of never hurting any of these children, using local anesthesia with all cases. Knowledge of this absence of pain was passed by word of mouth from one individual to another in the hospitals and soon there was a considerable decrease in the unwillingness of individuals to undertake dental treatment. Incidentally, this illustrates the influence of a group factor in institutional treatment which is less effective in the out-patient situation. He found also that it was necessary to vary his technique, such as examining patients at the desk, rather than in the dental chair, in order to be successful with them.

He remarked upon the usefulness of pre-medication as a means of reducing anxiety and hyper-activity, his feeling being similar to that reported in this country. He also re-emphasized the idea

that scheduling additional time in the beginning and proceeding cautiously and slowly paid liberal dividends in terms of later treatment. On the other hand, learning to recognize individuals who were untreatable in the office and treating them by means of hospitalization and total anesthesia was part of the duty of such a staff dentist.

Finally, in institutional treatment, orientation and training of nursing and home care staff was of paramount importance in good oral health for these individuals. Emphasis on routine, simple oral hygiene was highly important in reducing the incidence of dental and periodontal disease.

REFERENCES

ALBUM, M. M.: Psychosomatics in Dentistry for the Handicapped Child. Cerebral Palsy Rev., V. 17, No. 2, 1956.

ALBUM, M. M.: General Anesthesia and Pre-medication in Dentistry for Children. J. of Dent. for Child., V. 24:215-223, 1957.

ALBUM, M. M.: Premedication for Handicapped Patients. Proc. Workshop on Dentistry for the Handicapped, Univ. of Penna. Press, Sept. 1958.

BREGSTEIN, J. J.: Interviewing, Counseling, and Managing Dental Patients. New York, Prentice Hall, X, 310 p., 1957.

BREGSTEIN, J. J.: Psychologic Aspects of Dental Practice. J. Amer. Soc. Psychosom. Dent., 4(2):57-60, 1957.

FRENCH, E. L. and SCOTT, J. C.: Child in the Shadows, Phila., Pa., J. B. Lippincott, p. 156, 1960.

KENNEDY, C.: The Medical Perspective of Mental and Neurological Disabilities in Children. Proc. Workshop on Dentistry for the Handicapped, Univ. of Penna. Press, Sept. 1958.

MACFARLANE, A. C.: Dental Health in Hospitals for the Mentally Defective. Proc. London Conf. on the Scientific Study of Ment. Def., In press, 1960.

MANHOLD, J. H.: Further Studies of the Relationship of Personality Variables to Dental Caries. U. S. Naval Sch. Aviat. Med. Res. Rep., Proj. No. 057.11.01, 5 p., 1953.

MANHOLD, J. H., JR., and HAFNER, H. J.: Dental Caries and Psychological Factors. J. Clin. Psychol., 14:319-321, 1958.

MCCARTNEY, J. L.: Psychosomatics in Dentistry. J. Canad. Dent. Assoc., 17(1):3-12, 1951.

MOULTON, RUTH: Oral and Dental Manifestations of Anxiety. Psychiatry, 18:261-273, 1955.

SAVITT, R. A.: Teeth Trauma and the Dentist-Patient Relationship. J. Hillside Hosp., 5:392-401, 1956.

SAVITT, R. H.: Teeth, Trauma and the Dentist Patient Relationship. J. Amer. Soc. Psychosom. Dent., 4(4):122-131, 1957.

SCHWABACHER, E. D.: Interpersonal Factors in Rampant Dental Caries. J. Amer. Soc. Psychosom. Dent., 5(2):56-70, 1958.

SHOBEN, E. J., and BORLAND, L.: An Empirical Study of the Etiology of Dental Fears. J. Clin. Psychol., 10:171-174, 1954.

Abstract

EXTENSIVE CUTANEOUS MONILIASIS—D. Buzdygan, M. Lepper, I. Neuhauser, and I. M. Rosenthal. Am. Jr. Dis. of Child., Vol. 102:2, P. 168:179, Aug. 1961.

The authors point out that extensive cutaneous and oral moniliasis seen in childhood are of interest not only because of the therapeutic problems involved in the management of the infection but also because of possible association with conditions of hypoadrenalism, hypoparathyroidism and hypothyroidism.

Three cases treated at the department of Pediatrics of the University of Illinois College of Medicine with a new antibiotic agent, Amphotericin B showed remarkable progress in clearing up the infection. It appeared to be a useful drug in those cases of extensive, resistant chronic moniliasis. It was pointed out that where impairment of adrenal reserve is found, this antibiotic therapy should only be undertaken in selected cases with extreme caution after appropriate adrenocortical steroid therapy.

It was felt that there was no evidence that the monilial infection was directly or indirectly responsible for associated pathological lesions.

M. M. ALBUM

Case Report

EARL ELMAN, D.D.S.

EDITOR'S NOTE: *The accompanying case report is presented as being typical of the findings being uncovered by a survey of TMJ disturbances, conducted by Dr. Elman, who suggests our readers inquire about gum chewing habits of their patients who give any indication of temporo-mandibular joint disturbances. Your correspondence with Dr. Elman is invited.*

A.E.S.

A NINETEEN year old male whose orthodontic treatment had been completed (Cl. II, Div. 1) in June 1955, re-presented himself in September 1960 with severe symptoms of soreness and clicking in the temporo-mandibular joint and a history of extreme difficulty in being able to open his mouth in the morning, often to the extent of not being able to eat breakfast. Along in the morning the soreness would diminish and he could then separate his teeth approximately one-fourth of an inch. This had been a daily occurrence for the preceding six to eight months. As a freshman at a midwestern university he contacted their student health service. Cortisone was injected into the joint and gave temporary relief for only two to three days. It was then recommended that because of possible occlusal disturbances, the teeth be "cut down." The patient then presented himself to his own dentist, who, after examination, could find no cuspal or occlusal interference and therefore referred the patient back to our office for appraisal. Examination revealed no visible dental disturbances which could be connected to the symptoms and conditions described by the patient. Temporo-mandibular joint x-rays appeared negative.

After exhaustive questioning pertaining to injuries, blows, habits, etc., it was brought out that the patient, in order to relieve the tensions and pressures to which he was subjected while studying at the university, had started to chew gum. His gum chewing habit consisted of chewing a full stick of gum for at least one to two hours, discarding the used wad, and then immediately chewing another full stick for one to two hours. He admitted chewing at least a full pack of five sticks per day and on many days chewed more than one pack. It was firmly recommended that he immediately and completely stop this excessive chewing of gum. This he did. All his symptoms of temporo-mandibular soreness and clicking and the inability to open his mouth disappeared within four months. No other treatment was performed and to date the patient is perfectly comfortable and completely free of any of his previous symptoms.

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Routine Preoperative Medication in Dentistry for Children

JOSEPH G. STEWART, D.M.D.

TO deal effectively with the wide range of emotional responses in children, the pedodontist and general practitioner of dentistry must utilize imaginatively all technics available. However emotional control is obtained—through use of the voice, adult reassurance, hypnosis, nitrous oxide, or general anesthesia—the dentist will find the emotional stress encountered in his practice greatly eased by establishment of routine preoperative medication in children.

Varying degrees of odontophobia are present in most patients, but in children experiencing, perhaps, their first dental visit, apprehension may be acute and damaging. Proper means used to make this experience more tolerable for the child help to create a relatively peaceful emotional climate for the patient, the parents, and the dentist. Though routine, mild, preoperative medication should be used, this alone is clearly not the full answer to the problem.

Mild sedation can produce emotional calmness, and with this, the capacity to tolerate some pain without violent reaction. "Sedation," however is not the best term to describe the status desired. The word "sedation," when used to discuss the effects of secobarbital or pentobarbital, for example, is associated with long-continued somnolence, loss of mental acuity, difficulty in ambulation, pre- or postopertative excitement, and uncertainties regarding correct individual doses for particular children. To differentiate, the term "psychic sedation" and "ataraxia" have been used to denote the effects of tranquilizers or ataractics which successfully reduce pre-operative emotional anxiety without producing the foregoing side and extension-effects. It is, then, preoperative ataraxia, or a state of subdued emotional responses without loss of mental alertness that the pedodontist wishes primarily to achieve in his patients, routinely.

Some authors question the use of any sedation routinely. For several reasons I disagree with them quite strongly on this point. Although in a busy practice, no one is capable of evaluating the emotional attitude of all his patients, I agree that after due experience we can become quite adept at anticipating the majority. I am a firm disciple of the theory that the first experience that the child encounters will have a profound effect on his dental attitude throughout his life. If our judgment is in error and we have not done our utmost to protect him from any emotional trauma, we have failed the child; as there was a possibility of making a sound dental patient of him by sedating him regardless of our preconception. Furthermore, I find in perfectly balanced children an ability to tolerate routine procedures and the development of a better mental outlook toward dental treatment when they are routinely sedated. I admit these conclusions are subjective, but I invite anyone to mildly sedate a new child patient, as I will describe hereafter, for the first three appointments and to then withdraw the sedation for the fourth operative visit. Often the transition is quite

dramatic, even in the most balanced patient.

Dental practitioners who subscribe to the necessity for routine premedication in children's dentistry—and the number seems to be increasing—will doubtless have tried various barbiturate and tranquilizing drugs. Among the ataractics is a compound, hydroxyzine hydrochloride, which has been found to be particularly well suited for premedication. Accordingly, a small body of favorable literature on the use of this compound in dentistry has appeared, reporting its efficiency and safety.

The present writer has limited his use of ataractics for routine, mild psychic sedation in children almost solely to hydroxyzine during the last five years. Since this experience has encompassed about 2,600 different patients and approximately 9,680 doses of hydroxyzine in the form of Atarax,* a report on this clinical experience is now in order.

Routine Clinical Procedures

In practice, discussion of premedication is routinely carried out with parents of children being seen as new patients. This talk is designed to acquaint the adults with general concepts which lie behind premedication, to gain information about the child, and to enlist the parents' active cooperation in making the dental experience as easy as possible for the child-patient. Virtually all parents appreciate this time and interest shown by the dentist on behalf of their child.

As a result, about 98 per cent of all new patients are routinely premedicated with Atarax Syrup. The parent is given the prescription, along with instruction to administer the prescribed dose 45 minutes prior to the scheduled time for dentistry. The dosage used varies only slightly. Generally, for a child under four years of age, one teaspoon (10 mg.) of hydroxyzine is prescribed; children in the age group of four to twelve years are given two teaspoons (20 mg.). These are our exploratory dosages; and if we need to alter it, we instruct the parent to do so for the next visit.

As expected, during the initial talk with the parents, it is established whether or not the child has had a recent or prior history of prolonged drug therapy. When this is the case, the physician treating the child is contacted with the view of discussing the use of Atarax. Departures from the standard regimen mentioned above, in connection with each dental visit are, however, rarely necessary.

From time to time a child will appear with a history of extreme apprehension regarding the dental procedure. In these cases, two teaspoons (20 mg.) of Atarax are prescribed, before retiring, the day preceding the dental appointment. This assures a restful night and, with the dose 45 minutes prior to seeing the dentist, greatly expedites the operation.

I find that some authors feel a dosage of 20 mg. is not adequate and they give as much as 100 mg. prior to the appointment. I feel that when we use a dosage this severe, we often lose rapport with the patient, plus subjecting him to a feeling of drowsiness for the remainder of the day. Parents and teachers complain when this situation exists and are less likely to assist in future appointments. When a child is heavily sedated, he is not able to respond sharply during

* Atarax—Product of J. B. Roerig and Company, Div., Chas. Pfizer & Co., Inc.

the procedure and as a result, our operative appointment is slowed, contradictory to our basic effort.

While on the subject of basic dosage I should include that some men advocate giving the initial dose as early as two hours prior the appointment. Their reasoning is that chemists at the J. B. Roerig Company who manufacture hydroxyzine syrup have reported that while the effects of Atarax can be shown in 15 to 20 minutes after administration, the peak effect is reached in two hours. I do not differ strongly with these men except that I find that in following my advocation of routine premedication, parents like to be practical. In my size city most parents begin preparations to come to the office about an hour before the appointment. This is when they receive their medication and are dressed to go out. Some men advocate divided dosages, but parents seem to find it inconvenient to call a child in from his play for sedation, call him in again for the second dose, and finally call him in again to dress. I further find this longer period of time between receiving sedation and dental treatment is not necessary to get the effect I want. Most of my appointments are from 1-1½ hours long and the peak effect is reached near the end of the appointment which is the most trying time, and it is here you need it most.

For unscheduled operative visits, required in all dental practices from day to day, a supply of hydroxyzine is kept available in the office. The dose is given to the patient when he first arrives. Between 15 to 20 minutes later, by the time the dentist is prepared to perform the procedure, the medication has produced the desired effect, making the child more amenable to treatment.

Discussion of Special Cases

Routine mild, psychic sedation is, of course, not in itself the magic answer in overcoming the fear the child may have of dentistry. At best, though, used intelligently as an adjunct to other programs it can measurably expedite the proceedings.

For example, the writer participates in a program of dental care for cerebral palsy children. In the clinic, "sedation" with hydroxyzine is carried out routinely. When, as is frequently the need with spastic children, a general anesthetic is employed, a physician-anesthesiologist performs the service. By routinely quieting these children emotionally with hydroxyzine the night before, smoother induction with less quantities of anesthetic drugs has been observed. In comparison with other drugs, particularly barbiturates, we observe a more rapid postoperative recovery.

In conjunction with hypnosis and with nitrous oxide analgesia, preoperative medication with hydroxyzine has also proved successful. This technique requires the use of a Heidebrink-Simplex machine. The procedure, following premedication, is to begin by questioning the child seated in the chair. The question varies with the age and sex of the child, to fully engage attention and cooperation. For example, a girl in the 3-8 year old group might be asked if she has ever heard or seen a fairy angel. A narration is then made, describing the fairy angel and the manner in which she flies into the dentist's office on certain mornings and places this "thing" over the dentist's nose (accompanied by demonstration) to "make him feel happy and good. Wouldn't you like to feel good too?" The nosepiece is immediately placed over the child's nose and a hyp-

notic monotone is begun. "Hands will feel light, you will feel very happy, your feet will tingle, you will feel very good, you are feeling like a fairy angel, etc." With this procedure, 50 per cent oxygen is used with the nitrous oxide, and the child can be maintained easily for an hour or more.

Interestingly enough, this general technique, employed during a 13-month period on approximately 1,500 different occasions, has failed in only about fifty instances. I have found, though, in almost all cases, placing the nosepiece for nitrous oxide administration vastly more difficult without hydroxyzine premedication, story-telling, and hypnotic techniques.

Hypnosis has proved useful as an adjunct to the dental treatment of hemophiliac patients, in patients who refuse the nosepiece for analgesia, and those that the dentist is attempting to instill improved mouth habits. In the relatively rare instances in which this technique has been employed, hydroxyzine has been given the night before, and again an hour prior to the visit, to insure maximum relaxation and cooperation.

Conclusion

In view of present day knowledge regarding the possibility of permanent damage from psychic trauma experienced in childhood, steps should be taken routinely to help allay fear of dental procedures in children. Mild psychic sedation with hydroxyzine hydrochloride is therefore advocated both in "problem patients" and in those with composed, rational viewpoints toward the visits.

Hydroxyzine may suffice alone, in some few patients, depending upon the nature and length of the dental procedures. But, used adjunctively with general reassurances, hypnosis, nitrous oxide, or general anesthesia, hydroxyzine is a most valuable component in a total program for controlling the apprehension of the patient. A healthier attitude toward dental visits in childhood may well be reflected in more cooperative attitudes toward medical practitioners throughout the patient's life.

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REFERENCES

1. Alexander, A. D.: Evaluation of an Ataractic (Hydroxyzine) in 2,025 Patients as an Adjunct in Oral Surgery. West Virginia Dental J., 34:56 (July) 1960.
2. Protell, M. R.: A Clinical Appraisal of Hydroxyzine (Atarax) in Dental Practice. New York State D. J., 25:348 (Oct.) 1959.
3. Abramson, A. S.: Immediate Full Denture Construction: Surgical Variations, Paper presented at the American Dental Association Centennial Meeting, New York, N. Y., Sept. 14-18, 1959; Intravenous and Systemic Medication in Anesthesia for Dentistry. J. Southern California State, D. A., 26:361 (Oct.) 1958; also, Hydroxyzine as an Adjunct to Local Anesthesia, J. Southern California State D. A., 26:26 (Jan.) 1958.
4. Capper, B.: An Evaluation of Hydroxyzine Hydrochloride as a Pre-operative and Post-operative Adjunct in Dental Procedures, Australian D. J., 3:371 (Dec.) 1958.
5. Kopel, H. M.: The Use of Ataraxics in Dentistry for Children, J. Dentistry for Children, First Quarter, pages 14 to 25, 1959.
6. Lampshire, E. L.: Balanced Medication. J. Dentistry for Children, First Quarter, pages 25-28, 1959.
7. Abramson, A. S.: Positive and Profound Local Anesthesia, J. Southern California State D. A., 26:320 (Sept.) 1958.
8. Kopel, H. M.: A Comparison of Ataractics and Barbiturates for Dental Premedication. Scientific Exhibit, 101st Annual Session of A.D.A., Oct. 17-20, 1960, Los Angeles, California.

A Study of the Treatment of Infected and Necrotic Primary Teeth

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The Problem

MANY thousands of dependent children of Army personnel provide a vast fund of problems for a Pedodontist. Among these is the classic problem of the treatment of infected primary teeth. It may safely be called a dental disaster for a child to lose a primary molar before the age six. In considering growth and development, it is most disconcerting to see any child forfeit any primary tooth, through neglect or otherwise, before its normal time of exfoliation. Even if a tooth is badly broken down and infected, there is no better space-maintainer available if it is rendered void of infection, restored and saved.

Clinical Appearance

Children seen in our clinic vary in ages, but the majority of problems fall in the 4 to 7 age group. The primary molars have been present in the oral cavity from two to five years in this group, and it is possible to observe any condition from a clean caries-free mouth to infected and necrotic teeth. The appearance of the latter is frequently obvious to the operator in the forms of broken down and deeply carious teeth and wide open exposures. Those that are not obvious are soon confirmed by the putrid odor emanating from the chamber. If the infection has been present for some time, a parulis or draining fistula may also be observed. Most infected and necrotic teeth follow a pattern of development which begins with sensitivity to hot, cold and sweet over a period of time, then a severe toothache for a few days which subsequently subsides by itself if not treated. At this stage, the tooth has lost its battle for life and necrosis of the pulpal tissue begins.

Objectives of Treatment

Primary in the treatment of any patient, is the relief of pain. Every worthwhile procedure on the child patient stems from this premise. Once the patient is comfortable, treating the infection becomes more simplified, especially if it is to be removed surgically. The third consideration is restoring the teeth to prevent problems of mastication, speech and esthetics, which are so important to the growing child, from arising. In concordance with this is the important objective of preserving space for the eruption of the permanent dentition.

The Method

The method which we employ has evolved from a trial and error origin to a rapid, safe, comfortable treatment that has proven out to be very successful, clinically. The coronal portion of pulpal tissue of all teeth with carious exposures and a history of pain is completely removed. The chamber is flushed well with copious amounts of water and then dried. A small pledget of cotton

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dampened with the "formalin solution" is placed over the root canals and sealed in with zinc oxide and eugenol. This is the extent of the first visit.

The term "formalin solution" is used as a matter of convenience to describe the dressing used in our therapy. Its actual ingredients will be discussed in more detail later in the paper.

The ideal time for the second visit is 3 to 5 days after the original treatment. At this time the cotton dressing is removed and the chamber repacked with zinc oxide and eugenol and an amalgam restoration or stainless steel crown is placed.

Great caution must be observed in this procedure so as not to perforate through tooth structure at the bifurcation or elsewhere and enter surrounding tissue. If this happens, the treatment is not continued but the tooth is removed.

Cases with a parulis, fistula or cellulitis evident require additional therapy by means of incision and drainage, curetting and antibiotics. Severe cases should be followed along daily to effect positive management.

Evidence

Since January 1958, 863 cases have been treated and only 5 known failures have returned to the clinic. Two of these were maxillary primary centrals, both in two year olds, that were badly traumatized by falls. It is suspected the reason for failure was due to lateral perforation of the chamber during the difficult pulpotomy operation at this age. The other three failed due to mechanical perforation of the bifurcation at the first visit. Six month and one year x-rays reveal no periapical or intra-radicular pathosis on the cases we were able to follow. It has been difficult to observe whether root resorption has been hastened in this period of time as some authors have reported.

Discussion

Our present solution is a result of continual research and modification from a beginning using only Beechwood creosote. It now contains formalin (2 per cent), creosote (15 per cent), thymol (5 per cent), and phenol (5 per cent) in aqueous glycerine. The following is intended to provide a little background of each of the contributing drugs used in our solution:

"Formalin is extensively used as a disinfectant, deodorant, and preservative. In high concentrations it is a protein precipitant and preserves and hardens tissues. Formalin in 1 to 2 per cent solution is an effective germicide against all forms or organisms. It is too irritating to be applied to body tissues in effective concentrations. Its widest use is in disinfection."[5]

"Creosote is a mixture of phenols obtained from wood tar. The bacteriostatic and germicidal potency of creosote is weak. It is applied upon cotton to exposed nerve tissue in teeth, where it acts as a local anesthetic. It is also hemostatic when applied to bleeding surfaces."[7]

"Thymol was introduced as a disinfectant for about the same purposes for which phenol is employed. The advantage claimed for it was a more agreeable odor. In the absence of organic matter it is undoubtedly a much more powerful bactericide than phenol."[11]

"Phenol is locally irritant, anesthetic and mildly caustic. When applied undiluted to the skin or mucous membranes it causes a pain, followed by numbness,

and is accompanied by whitening and corrugation of the surface due to precipitation of protein. In 5 per cent solution, it is only mildly irritant, but actively anesthetic and germicidal."[10]

In looking for a method to treat these necrotic primary teeth the literature was thoroughly investigated and very little was found written on this problem. Root canal therapy was generally deemed impractical from an economic standpoint, and in our particular situation where the volume of patients treated was so great, root canal therapy was not only impractical but impossible. It was felt that extracting these infected primary teeth would certainly relieve the immediate problem, but was not a service to the patient in terms of what we know regarding the drifting of teeth, loss of space, growth and development. Extractions were employed, however, when good judgment dictated.

"Combinations of formaldehyde and cresols have been used for many years in treating teeth, especially primary teeth with pulp exposures. Gysi's triopaste (tricresol 10 cc., creolin (Pearson) 20 cc., glycerin 4 cc., paraformaldehyde 20 cc., zinc oxide 60 gm.) was one of the first such combinations to enjoy wide popularity in both Europe and the U.S.A. It was superseded in this country by Buckley's formula (cresol 35 per cent and formaldehyde 19 per cent in aqueous glycerine solution)."[8]

Opinion is divided on the use of formalin preparations for the treatment of infected pulps. Authors of some texts on Pedodontics such as M. Michael Cohen[2] and Sidney B. Finn[4] make no mention of the use of these preparations. J. C. Brauer discusses the use of formalin preparations in his text as follows:

> Nacht (1956), in discussing a devitalization technique, refers to the use of a formaldehyde paste in some 467 primary teeth, of which only 30 teeth were lost because of acute symptoms. However, he indicates that in an analysis of the radiographs, this technique apparently hastened the root resorption of the treated tooth, and that this was evident generally some 2 years after treatment. Such resorption of the roots permitted early eruption of some permanent teeth. Brauer (1947) in past years used a paraformaldehyde paste. While there was evidence of early root resorption in some cases, this was not true in all instances. Comparative data regarding the success or failure of this treatment are not available from the author's records. The principal reason for discontinuance of the procedure was the time required for the two appointments. The vital pulpotomy technique is accomplished in one appointment, which permits the completion of the cavity preparation and the insertion of the filling, if silver amalgam is employed.[1]

The use of formalin applied to the pulp chambers of teeth is not without some hazard. The following is a quotation from the 1960 edition of *Accepted Dental Remedies,* regarding the use of formaldehyde:

> The application of formaldehyde to the oral tissues is restricted because of its powerful irritant properties. To reduce this irritation combinations with cresol, thymol and other phenols have been used in the disinfection of infected pulp canals. Unless great caution is observed in applying these solutions, necrosis of the periapical tissues will occur.[3]

In the JOURNAL OF DENTISTRY FOR CHILDREN, Fourth Quarter 1959, Maury Massler and Nirmala Mansukhani[9] of the University of Illinois presented an excellent paper on the effects of formol-cresol on the dental pulp. Their investigation was initiated at the suggestion of Dr. Charles A. Sweet and supported by The Pedodontic Research Group of California. Considerable assistance was provided them by Drs. Clinton Emmerson and I. I. Beechen who supplied the

human teeth for histological study. In their discussion, they state the following:

> During the past 35 years, Dr. Charles A. Sweet has taught the use of a formol-cresol combination (Buckley's formula) for the preservation of primary teeth exposed by caries (Sweet and Beechen, 1956). This technique is generally known as "Sweet's Therapeutic Pulpotomy Technique" (Sweet, 1948). It has undergone a number of modifications and at the present time requires two visits (Sweet, 1958; Sweet and Beechen, 1956). The first visit consists of amputating the pulp to the root canals under local anesthesia and sealing a dressing of formol-cresol saturated on a cotton pellet over the site of amputation for a period of seven days. At the second visit one week later, the area is cleaned and a permanent dressing is placed, consisting of formol-cresol and eugenol mixed with zinc oxide. This covered with a zinc phosphate cement and filled with amalgam. Sweet specifically restricts the use of formol-cresol to primary teeth (Sweet, 1959).
>
> Sweet's "Therapeutic Pulpotomy" has enjoyed extraordinary clinical success and popularity especially on the west coast. Thousands of primary teeth which otherwise would have been extracted prematurely have been preserved by this procedure. Its effectiveness is thought to be due to its sterilizing action on dentin and infected pulp, although no studies have been performed to document this conclusion. The pulp also becomes "mummified" and painless and therefore is easily amputated even in a fearful child.
>
> Although generally conceded to be a devitalizing procedure to the pulp, its clinical success has, in general, exceeded the more widely used vital pulp amputations using calcium hydroxide as advocated by Hermann (1930), Zander (1939), Hess (1950), Englander, *et al.* (1956) James, *et al.* (1957) and many others.

From their research, Massler and Mansukhani learned that "the surface of the pulp immediately under the formol-cresol became fibrous and acidophilic within a few minutes after the application of the formol-cresol. This was interpreted as a "fixation" of the living tissue. After 7 and 14 days of formol-cresol application, the pulp showed three distinctive zones; a broad acidophilic zone (fixation); a broad pale-staining zone wherein the cells and fibers were greatly diminished (atrophy); and a broad zone of inflammatory cells concentrated at the junction with pale-staining zone and diffusing deeply into underlying normal pulp tissue at the apex (inflammation). There was no secondary or reparative dentin formation evident in any of the human specimens examined. Formol-cresol placed on human pulps for more than 14 days produced a fibrous fixation of the living tissue. For maximal effectiveness as a germicide and minimal action on the pulp tissue, it is suggested that formol-cresol be applied for 2 to 3 days and for no more than 7 days."

Summary

Many thousands of children provide a good number of dental problems. Among the outstanding is the infected and necrotic primary tooth. This problem varies in appearance depending on the extent of the caries and bacterial penetration, and is frequently accompanied by a fetid odor emanating from the chamber of the tooth.

There are three essential objectives in treating this problem; the relief of pain, the removal of infection, and the maintenance of the integrity of the dental arch.

The method involves the complete removal of coronal pulpal tissue and covering the root canals with a pledget of cotton dampened with our formalin solution. This is sealed in the tooth with zinc oxide and eugenol at the first visit. In 3 to 5 days the patient returns, the cotton dressing is removed, the chamber packed with zinc oxide and eugenol and the final restoration is placed.

Since January 1958, 863 cases have been treated with only five known failures. Three of these failures were due to mechanical perforation of the tooth at the bifurcation and the other two were suspected of having been perforated.

Our present solution is a result of continual research and modification from a beginning treatment using only Beechwood creosote. It now contains formalin (2 per cent), creosote (15 per cent), thymol (7 per cent), and phenol (7 per cent), in aqueous glycerine.

The literature was searched, reviewed and pertinent material reported on, regarding the use of formalin preparations in treating this problem.

In conclusion, our management of this problem has enjoyed overwhelming clinical success. The relief of pain in conjunction with the performance of an invaluable service to the patient is a most rewarding achievement.

REFERENCES AND BIBLIOGRAPHY

1. Brauer, J. C., *et al.*: Dentistry for Children. McGraw-Hill, 1958. Chapter 14.
2. Cohen, M. Michael: Pedodontic Dentistry. C. V. Mosby Co., St. Louis, 1957.
3. Council on Dental Therapeutics: Accepted Dental Remedies. American Dental Association, 1960, pp. 98.
4. Finn, Sidney B., *et al.*: Clinical Pedodontics. W. B. Saunders Co., 1957.
5. Goodman and Gilman: The Pharmacological Basis of Therapeutics. 2nd Edition, The Macmillan Co., 1956, pp. 1085.
6. Leifson, Einar: Bacteriology. Paul B. Hoeber, Inc., 1942.
7. Martin and Cook: Remington's Practice of Pharmacy. 11th Edition, The Mack Publishing Co., 1956, pp. 974.
8. Massler, Maury, and Mansukhanl, Nirmala: Effects of Formol-Cresol on the Dental Pulp. J. Dent. Child., 26:277, 1959.
9. Idem.
10. Osol and Farrar: The Dispensatory of United States of America, 25th Edition, J. B. Lippincott Co., 1955, pp. 1427.
11. Idem.
12. Smith, David T., Conant, Norman F.: Bacteriology. 11th Edition, Appleton-Century-Crofts, Inc., 1957.

Premedication for Routine Dentistry For the Handicapped

C. R. Castaldi, D.D.S., M.S.D.*

ADVANCES in dental care for the handicapped have been so rapid that within the past ten years dentistry has seen this aspect of dental care progress from the discussion stage,[27, 1] to the point where now it is safe to say that no patient should be denied adequate dental service regardless of the type of handicapping condition.

The most significant even in this progress has been the introduction of restorative dentistry into the routine of the hospital by the untiring efforts of men such as Album,[2] Teuscher,[24] and others, who, along with many competent anesthesiologists, pioneered the early advances.

Nevertheless, many problems are still in need of careful attention if the efforts of the dental profession are to be utilized to the maximum to cope with the increasing need of better dental services for the patient who is handicapped. Dentistry looks to recent advances in the development and use of various types of premedication to help solve some of the problems.

One of the problems is that of providing more out-patient service for patients who are incapable of cooperating for routine dental care because of mental retardation or lack of muscular control as in cerebral palsy. A comparable group are from all the categories of handicapping conditions, who, because of fear, fail to provide their share of the mutual cooperation between patient and dentist so essential for a high level of operative efficiency. Obviously, this problem is not confined to the handicapped since many well patients could also be included in this group. Drugs intended to facilitate routine dental procedures for these types of patients will be referred to as *preoperative sedatives.*

Another consideration is the utilization of new developments in therapeutics which will permit the patient with a particular type of handicapping condition such as heart disease or diabetes to undergo routine dental care with a greater degree of safety. Drugs intended to produce a greater margin of safety for the patient will be referred to as *prophylactic premedicants.* Recent developments in the care of hypertensives undergoing dental extraction are included in this category.

Present Status of Preoperative Sedation in Dentistry

It is unrealistic to discuss preoperative sedation for the handicapped patient without relating it to the present status of preoperative sedation in dentistry in general. During the past several years a great deal has been written about the use of drugs and combinations of drugs for preoperative sedation. Some authors, notably Album,[3] Buchman,[7] Kopel[16] and Lampshire[17] have been enthusiastic about the use of sedative drugs for the very young child, the nervous child, and the physically and mentally handicapped child. Jorgenson, Levine and Hurley,[15] have described their method of assisting

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the adult cerebral palsy patient through various phases of routine dental care. Brauer's,[6] "Dentistry for Children," and Cohen's,[10] "Pediatric Dentistry," both recent publications, deal with the subject of premedication rather briefly while Finn's,[11] "Clinical Pedodontics" contains an extensive chapter on pain and sedation.

Recently there have been several attempts to evaluate various sedative type drugs using the double blind study testing procedure. Ping and Redish,[21] tested ethinamate (Valmid) as a sedative agent and found that both dentists and patients judged this drug to be of value during oral surgery procedures. Although the report stated that all patients were adults, no age range was given.

Chilton and Fertig,[9] have described a method for statistically evaluating preoperative sedative drugs. When this method was used to test a tranquilizing drug, the name of which was withheld, the drug proved no better than a placebo. When Fertig and associates used the same testing method, mephenesin, a known muscle relaxant,[23] proved no better than a placebo. However, the dosage of mephenesin was considerably below what had been previously suggested.[4] In addition one might criticize the testing procedure on the ground that it is based on an evaluation of degree of cooperation using ++ or + for the total operation. Greater accuracy might have resulted had the cooperation been broken down into various phases. Hunter[13] has evaluated two anti-apprehensive drugs, ectylurea and meprobromate, in adolescent patients undergoing dental treatment and found neither superior to a placebo. The results of these studies are rather disappointing since the action of these drugs[23] strongly suggests that they are capable of fulfilling a definite need in dental therapeutics. It is possible that the nature of the routine dental operation is so unique that the double blind study method for evaluating preoperative sedatives is valueless.

Survey on the Use of Preoperative Sedation in Dentistry

In order to obtain more information on the subject of preoperative sedation a questionnaire was mailed to the departments of surgery, restorative dentistry and pedodontics of all dental schools in the United States and Canada. This questionnaire sought information on the use of preoperative sedative drugs for routine procedures for the well patient as well as for the handicapped. A somewhat similar questionnaire was also sent to a number of general practitioners in Canada and to all members of the American Academy of Oral Rehabilitation for Handicapped Persons. Thirty schools of a possible forty-four replied. Twenty out of a possible forty-five members of the A.A.O.R.H.P. replied. Too small a number of returns were received from the general practitioners to be reported on in detail. However, the returns indicated that the general practitioners in Canada are using preoperative sedative drugs even less than the pedodontic clinics in the dental schools, which use preoperative sedation for well patients. This study indicates that preoperative sedation is being used most frequently in oral surgery clinics, to a lesser degree in operative clinics and to a much lesser degree in pedodontic clinics. There also appears to be a considerable difference of opinion between teachers of surgery and pedodontics regarding the effectiveness of preoperative sedation for children. No doubt this state of affairs is very confus-

ing to students and may explain in part why there is such a wide difference in opinion by practicing dentists about the effectiveness of preoperative sedation. The use of preoperative sedation in the practices of members of the A.A.O.R.H.P. who returned answered questionnaires, follows a somewhat similar pattern to that of the department of surgery in the schools.

It is rather difficult to adequately evaluate the findings in this survey. Dr. Joseph Johnston,[14] Professor of Oral Surgery and Anesthesiology at the University of Toronto has commented on the present state of affairs thusly:

"The whole field of pharmacology is in a very confused state at the present time, particularly in regard to hypnotic and sedative agents. Hundreds of new products have been foisted upon us within the past few years, many without proper biological proof. When we draw lines of 'all or nothing' we are neither evaluating the patient properly nor discharging our responsibility to him."

It is obvious that dentistry is in dire need of information regarding the behaviour of patients undergoing dental treatment. Lewis and Law,[18] have described an objective method of studying autonomic responses of children during dental stress. Such a method could conceivably be of great value in testing drugs intended for preoperative sedation.

Preoperative Sedation for Routine Dentistry for the Handicapped

Other than for heart disease preoperative sedatives are not being used to any great degree for adult patients in the schools. Where children are concerned, preoperative sedatives are being used more often for mental retardants and cerebral palsy, although only in a few schools. The returns from these schools showed preference for combinations of drugs, a barbiturate with a narcotic or a barbiturate with a tranquilizer.

The returns from the members of the A.A.O.R.H.P. showed that all but two out of twenty used preoperative sedatives routinely for patients with mental retardation and also for the cerebral palsied. It was not possible to draw any conclusions about preoperative medications for other types of conditions since many of the returns stated that the patient's physician was usually left responsible for most of the drug therapy.

No doubt the most difficult problems to manage for dental care among the mentally retarded and cerebral palsied are being referred to the members of this Academy. Since the majority of the members are using demerol with a barbiturate or a tranquilizer to aid in the treatment of such cases, the value of demerol alone or in a combination with other drugs merits extensive investigation. In the case of children the complexity of the problem is very vividly described by Album[3] in the 1st quarter 1959 issue of the JOURNAL OF DENTISTRY FOR CHILDREN. Not only are there difficulties in the use of sedative drugs for well children but in the case of the cerebral palsied and mentally retarded the problems may be even greater. A thorough review of this article as well as the papers of Kopel[16] and Lampshire[17] in the same issue is highly recommended to all who are interested in the use of drugs to obtain cooperation from children. The report by Jorgenson et al.[15] about the use of drugs for the adult cerebral palsied which appears in December 1950 issue of the *Journal of the American Dental Association* is also worthy of careful review.

Prophylactic Premedication

One very significant advance in dental care for the adult with cardiovascular disease has been reported by Cheraskin and Prasertsuntarasai.[8] In a very carefully conducted series of four experiments they have shown that hypertensive patients, who have been preoperatively sedated with secobarbital (gr. 1½, 45 minutes beforehand) and where a local anesthetic containing epinephrine (lidocaine with epinephrine 1:100,000) was used, had fewer abnormal blood pressure changes while undergoing extraction than patients who received no sedation and local anesthetic without epinephrine. This is unquestionably a major contribution toward clearing up the confusion that still exists regarding the use of epinephrine in local anesthetics for the patient with high blood pressure.

Since it has become routine to use an antibiotic prior to oral surgery procedures in patients with heart disease and since penicillin is often the antibiotic of choice, the finding that there is less danger of allergic reactions from penicillin given orally[26] is worth repeating at this time.

Very little appears in the literature regarding the use of preoperative drugs other than penicillin for the child with heart disease. Lampshire[17] has suggested mild preoperative sedation using a tranquilizer as a safety precaution for children with a history of heart disease. During the years 1950-56 a series of 132 children with various types of heart disease received routine dental treatment at the dental clinics of the Children's Memorial Hospital in Chicago and the Riley Hospital in Indianapolis. Local anesthetics containing epinephrine were used for almost every operative and surgical procedure regardless of the type of heart condition. Clinically the children appeared to withstand the procedures quite well. The children with rheumatic heart disease were started on routine dental care after the sedimentation rates returned to normal. No preoperative sedation was used except for those children who had unoperable cyanotic heart disease or, as yet, had not been operated upon. These children were admitted to hospital, given a therapeutic dose of morphine and scopolamine plus antibiotics before one or several teeth were removed under local anesthesia using either procaine 2 per cent with 1:50,000 epinephrine or xylocaine with 1:100,000 epinephrine. The remainder of the dental treatment was done on an out-patient basis without the use of sedatives. These methods were established on the advice of the cardiology departments of these hospitals.

Although the child cardiac patient may receive benefit from drug therapy similar to that described by Cheraskin and Prasertsuntarasai,[8] there is as yet no evidence that they will. Other than the careful use of antibiotics to control operative bacteremia with the dosages worked out with the patient's physician there seems to be no evidence that the general dentist should not approach the problem of routine dentistry for the child cardiac patient in the same manner as for the well patient.

Blood Dyscrasias

The most challenging problem in this category is the patient with hemophilia. One recent report is most worthy of further consideration. Trieger, McGovern and Jacobson[25] have reported that hemophiliacs on steroid (Prednisone) therapy before extraction, required less postoperative blood and plasma and

stayed in hospital only half as long as a control group which was given no steroid therapy. If these results can be duplicated by more extensive investigation, this will undoubtedly be a major advancement toward helping solve one of the most challenging problems in clinical dentistry.

Discussion

As stated at the outset, a major responsibility of the dental profession is to provide more and better service for the handicapped. In the author's experience far too many patients with handicaps are being referred to dental specialists for routine care. Many of these have been referred because the dentist has felt that much special training was required and that a vast knowledge of the use of preoperative sedatives was necessary. The results of the survey conducted indicate that many patients who are handicapped are receiving routine dental care without preoperative sedation. Consequently, dentists in general practice need not feel that a thorough knowledge of, and experience in drug therapy is necessary to care for many of these patients. This has been pointed out previously by both Gellin,[12] by McKnight and Lloyd,[20] and also by Losch.[19] However, the results of this survey do suggest that for patients with mental retardation or cerebral palsy the use of demerol with a barbiturate or with a tranquilizer may be helpful.

Unquestionably, a great need exists for a satisfactory preoperative sedative for the most difficult to manage of these two types of patients. Only a few hospitals have facilities to permit dentists to do restorative treatment for patients under general anesthesia. Furthermore, few dentists have had the necessary training or experience. There is also the most frustrating problem that exists with the general anesthesia case who, on recall has been found to have two or three small new cavities and is still incapable of cooperating for routine dental care.

Since there appears to be a considerable difference in opinion about the effectiveness of preoperative sedation by some departments in dental schools the suggestion is made that these differences be resolved on the basis of careful studies by the joint efforts of these departments. Until there is more fundamental information about the behaviour of patients and perhaps even parents and dentists about all aspects of the dental operation, it is not possible to offer much reliable information for premedication for routine dentistry for the handicapped. Two studies, one by Lewis and Law,[18] the other by Cheraskin and Prasertsuntarasai,[8] are offered as good examples of the type of research that is needed.

There is now good evidence that adult patients with hypertension will benefit from the use of a short acting barbiturate plus local anesthesia with epinephrine while undergoing routine surgery. This preoperative regimen has not been tested for these patients while undergoing restorative treatment but in all probability similar benefits would result.

Summary and Conclusions

1. Premedication for routine dentistry for the handicapped has been discussed in terms of (a) preoperative sedation, (b) prophylactic premedication.

2. A survey on the use of premedication for both well and handicapped patients in dental schools and in private offices revealed that a wide range of drugs is being used for preoperative sedation. There were also many differences in opinions by dentists and by different departments in the dental schools about the effectiveness of preoperative sedatives.

3. More fundamental knowledge about the behaviour of patients undergoing routine dental care is needed before the value of preoperative sedative drugs can be adequately assessed.

4. Many patients with various handicapping conditions are receiving routine dental care without the use of preoperative sedatives.

5. The use of demerol in combination with other drugs is being widely used by the members of the Academy of Oral Rehabilitation for Handicapped Persons for sedation in cases of cerebral palsy and mental retardation. More extensive testing of this drug as to effectiveness and safety has been suggested.

6. There is good evidence that adults with hypertension will have fewer blood pressure changes during routine oral surgery procedures if given a short acting barbiturate (secobarbital gr. 1½, 45 minutes beforehand) and if a local anesthetic with epinephrine is used.

7. There is, as yet, no proof that drugs other than antibiotics are helpful to children with heart disease undergoing dental treatment. A review of 132 cases of children with both congenital and acquired heart disease indicates that such children appear as capable of withstanding routine dental care as do well children.

8. Recent evidence suggests that steroid therapy (prednisone) prior to extraction will reduce the problem of postoperative hemorrhage in patients with hemophilia.

BIBLIOGRAPHY

1. Album, M. M.: Why dentistry in cerebral palsy? J. Dent. Children, 17:11, 142nd quart. 1950.
2. Album, M. M.: Dental techniques and treatment in cerebral palsy. Dent. Digest, 57:2-5, 1951.
3. Album, M. M.: Sedatives, analgesic and belladonna derivatives in dentistry for children. J. Dent. Children, 26:5-13, 1st quart. 1959.
4. Album, M. M.: The dental use of mephenesin in cerebral palsy patients: a preliminary report. J.A.D.A., 45:165-170, Aug. 1952.
5. Berger, F. M. and Bradley, W.: Muscle relaxing action of myanesin. Lancet, 1:97, Jan. 18, 1947.
6. Brauer, J. C.: Dentistry for children. ed. 6. New York, McGraw Hill, 1958, p. 39.
7. Buchman, N.: Balanced premedication in pedodontics. J. Dent. Children, 23:141-153, 3rd quart. 1956.
8. Cheraskin, E. and Prasertsuntarasai, T.: Use of epinephrine with local anesthesia in hypertensive patients. J.A.D.A., 58:61-68, Jan. 1959.
9. Chilton, N. W. and Fertig, J. W.: The clinical dental trial. J. Dent. Research, 37:444-447, June 1958.
10. Cohen, M. M.: Pediatric dentistry. St. Louis, C. V. Mosby, 1957.
11. Finn, S. B.: Clinical pedodontics. Philadelphia, W. B. Saunders. 1957, p. 128-148.
12. Gellin, M. E.: Is dental treatment for the cerebral palsied a special problem? J. Dent. Children, 22:26-31, 1st quart. 1955.
13. Hunter, D.: Evaluation of antiapprehensive drugs in adolescent dental patients. J. Dent. Research, 38:681, July-Aug. 1959.
14. Johnston, J.: Personal Communication.
15. Jorgensen, N. B., Gevine, M. G. and Hurley, C. T.: Dental management of adult patients with cerebral palsy. J.A.D.A., 57:843-850, Dec. 1958.
16. Kopel, H. M.: The use of ataraxics in dentistry for children. J. Dent. Children, 26:14-24, 1st quart. 1959.
17. Lampshire, E. L.: Balanced medication. J. Dent. Children, 26:25-28, 1st quart. 1959.
18. Lewis, T. M. and Law, O. B.: Investigation of autonomic responses of children to a specific dental stress. J.A.D.A., 57:769-777, Dec. 1958.
19. Losch, P. K.: Dental care of the chronically ill child. J.A.D.A., 57:778-783, Dec. 1958.
20. McKnight, J. B. and Lloyd, C.: The challenge of cerebral palsy to the dentist. J. Dent. Children, 20:21-27, 1st quart. 1953.
21. Redish, C. H. and Ping, R. S.: Ethinamate (Valmid) in dentistry. Oral Surgery, Oral Medicine and Oral Pathology, 11:742-4, July 1958.
22. Sherman, H., Fiasconaro, J. E., Cain, E. A., Jr., and Fertig, J. W.: Control of dental anxiety with mephenesin, J.A.D.A., 58:63-64, March 1959.
23. Sollman, T.: A manual of pharmacology. ed. 8. Philadelphia, W. B. Saunders, 1957, p. 318-322, 401-403.
24. Teuscher, G. W.: General anesthesia for the pedodontic patient. Northwestern Univ. Bul., 51:15-16, Jan. 8, 1951.
25. Trieger, N., McGovern, J. J. and Jacobson, B. M.: Hemophilia, corticosteroids and oral surgery. J. Dent. Research, 38:742, July-Aug. 1959.
26. White, C. B.: Reactions to penicillin given orally in mass prophylaxis. U. S. Armed Forces, M. S. 4:1606, Nov. 1953.
27. Zappler, S. E.: Dentistry and the cerebral palsied child. J. Dent. Children, 16:16-18, 2nd quart. 1949.

Book Review

DENTISTRY FOR THE PRESCHOOL CHILD—G. N. Davies and R. M. King. London, Livingstone, 1961, vii + 259 p. (Baltimore, Md., Williams and Wilkins).

As stated in the preface of this new book, "there are many excellent textbooks on dentistry for children but few of them deal with the dental problems of the very young." The authors, who teach and practice pedodontics in New Zealand, have thoroughly covered this age group as to diagnosis and treatment planning with emphasis placed upon principles rather than techniques. But in certain chapters, the reviewer had found that detailed descriptions of techniques are not amiss.

There is an excellent chapter covering examination and diagnosis of the preschooler with a portion devoted to speech problems in relation to dental defects which is very enlightening. Also the chapter on management at the various age levels is good but the few lines given to the subject of premedication are inadequate and not at all impressive.

Nutrition, diet and diseases of children and their relation to dental and oral problems are covered very concisely. Dental pathology and soft tissue lesions are discussed with some black and white illustrations.

The chapter on interceptive orthodontics deals mostly with space maintenance and perhaps too much emphasis is placed here. An interesting chapter covers injuries to the anterior primary teeth. The diagnosis and treatment of this particular subject is very important (especially to the parents who seem only to see the anterior teeth in a child's mouth!)

A chapter on the control and prevention of dental caries is included and it is very comprehensive, easily read and understood. Drs. Davies and King have cited some very recent work with methods of protecting tooth surfaces with acid repellent or acid resistant film.

The book also covers morphology of the primary teeth and its relationship to cavity preparations, although here in the United States other types of preparations are used in the various geographical areas depending on the influence of nearby dental schools.

The last two chapters discuss filling materials and various types of pulp therapy. Of interest here is a technique for pulp mummification along with a complete pulpectomy procedure. The reviewer cannot agree that this type of pulpectomy procedure has any merit unless the root canals themselves are treated and filled.

This book is a well written and easily digested book for all dental practitioners. It is to be commended and recommended, for it points out that the preschooler is not a problem for the pedodontist alone but can be managed with success in a general practice.

HUGH M. KOPEL, D.D.S., M.S.

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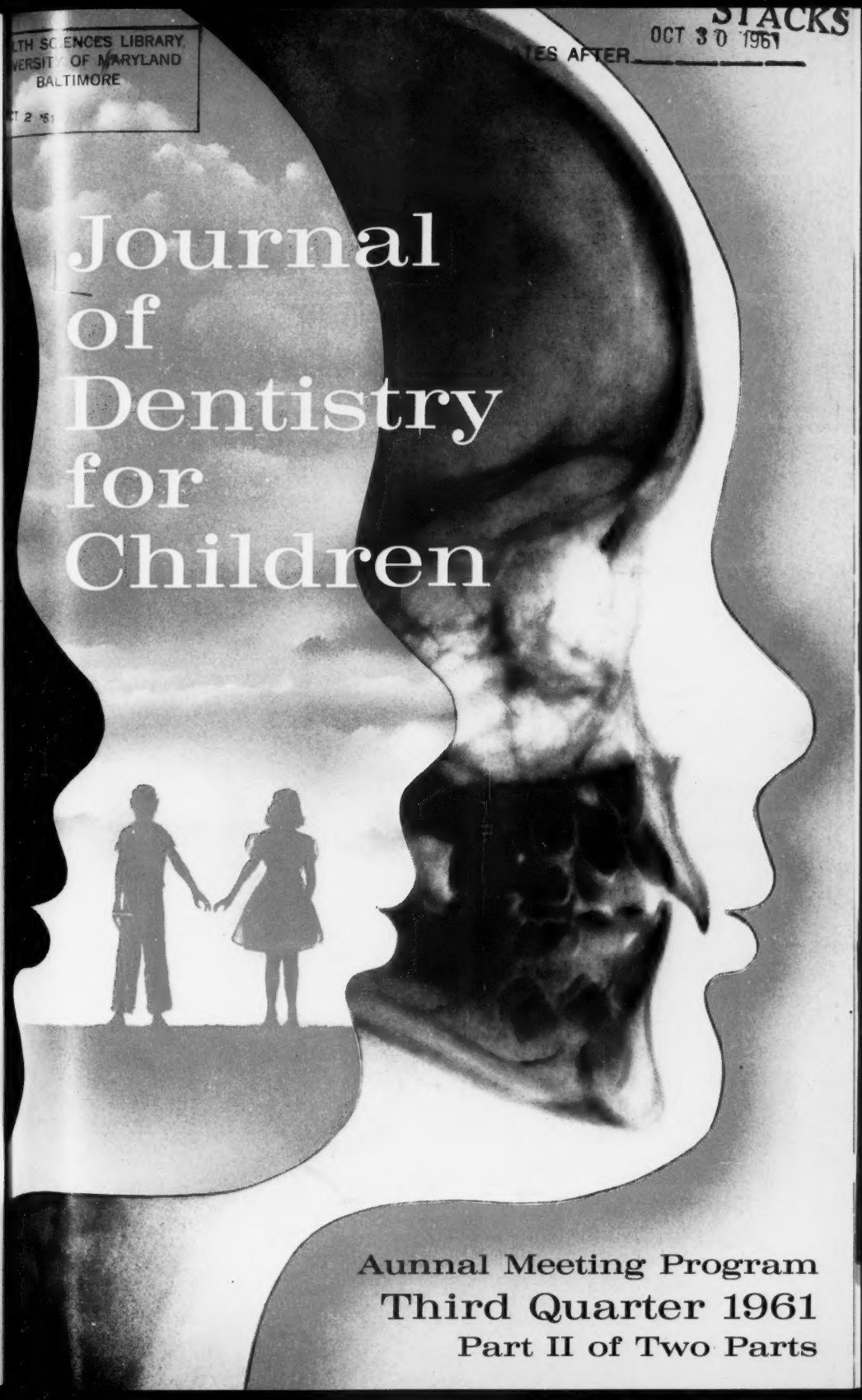

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VOLUME XXVIII — *Third Quarter, 1961—Program* — NUMBER 3, PART II

CONTENTS

President's Message 228

National Officers and Committees 229-230

Local Arrangements Chairmen and Committees 231-234

General Information 239

Social Program 240

Condensed Program 241

Closed Circuit TV 242

Scientific Luncheon 243

Registered Clinics 244-245

President's Banquet 246

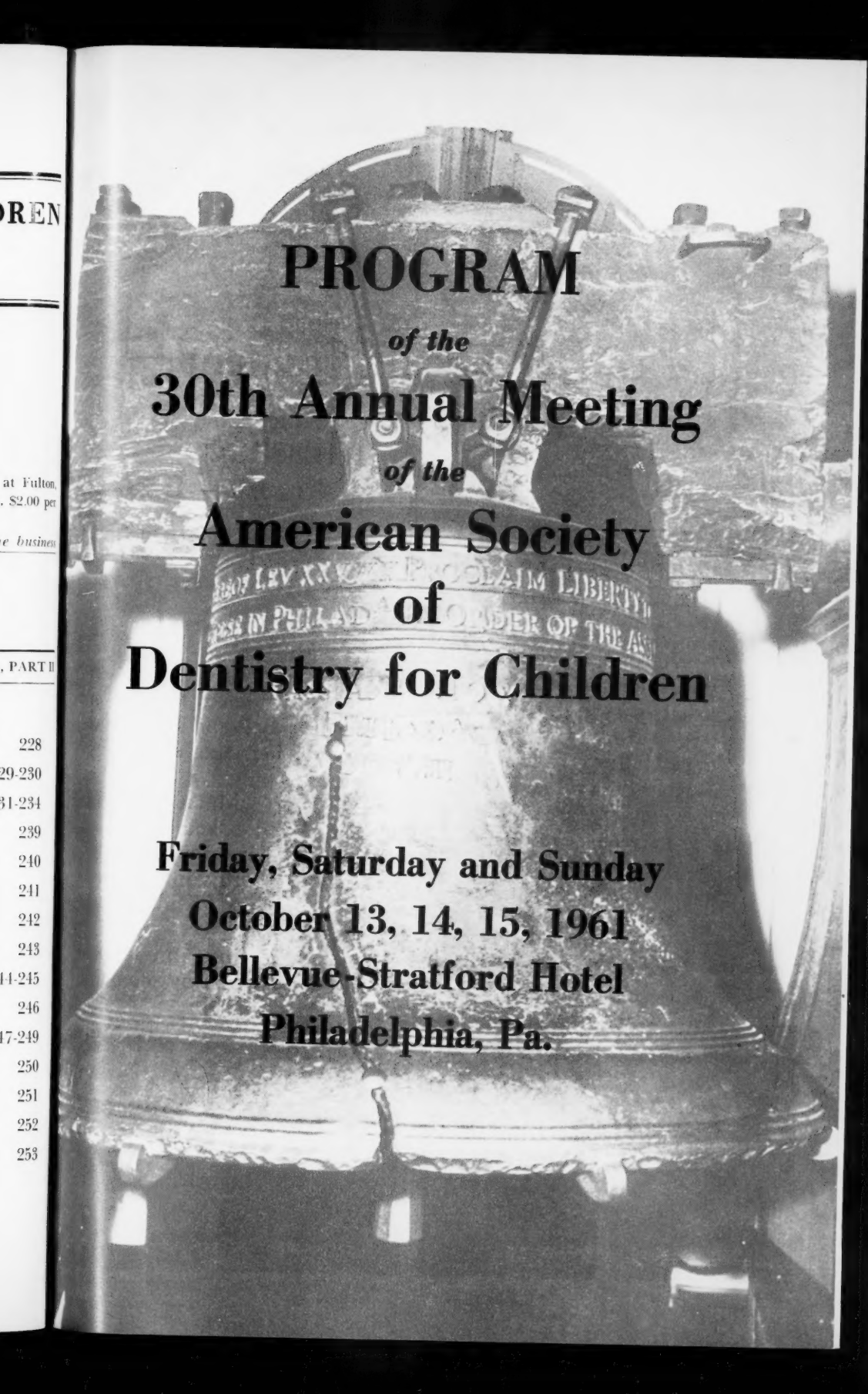
Table Clinics 247-249

Dr. Krogman to Be Honored 250

Panel Discussion 251

Past Presidents 252

Registration Blank 253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President's Message

Welcome to Philadelphia and the 30th Annual Meeting of the American Society of Dentistry for Children. In these unusual years in our national destiny, it is wonderful to have an opportunity to visit the city of the Liberty Bell and Independence Hall; to renew our knowledge of our heritage as a democracy in the cradle of American History.

Each year A.S.D.C. provides its members with an outstanding national meeting. I am most pleased and extremely proud of Manny Album and his committees, who have worked so diligently for over two years to produce a smooth running program and one that has a wide general interest for all of our members.

Once again, welcome to the Annual Meeting, and I hope that each of you will have three days of invigorating scientific provocation and social fun.

James W. Simmons

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Indianapolis, Indiana

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ALFRED E. SEYLER, D.D.S.
Editor
Detroit, Michigan

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American Society of Dentistry for Children 1960-61

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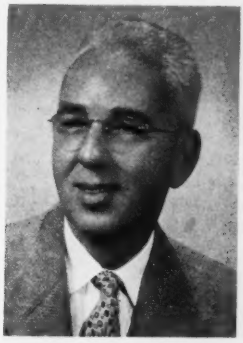

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Convention Co-ordinator and General Co-Chairman

MANUEL M. ALBUM

The Committee extends to all a cordial invitation to attend the 30th Annual Meeting of the American Society of Dentistry for Children in Philadelphia from October 13 to 15, 1961.

It is our feeling that this will be one of the finest scientific programs ever to be presented to the A.S.D.C. membership. The participants in the closed circuit television program, the registered clinics and the table clinics are of the highest caliber.

Free registered clinics are an innovation this year, and it is hoped this will be an added inducement toward 100 per cent attendance and active participation by the members of the society.

Various sub-committees have expended a great deal of effort to make your visit to the City of Brotherly Love an enjoyable one socially and a beneficial one from the scientific standpoint.

If you have not already registered, we ask you to do so now to enable us to make the best arrangements and to have the pleasure of being your host in October.

Convention General Co-Chairman

RAYMOND WERTHER

Local Arrangemeon

Table Clinics

Elwood M. Spellman

Morton Cohen

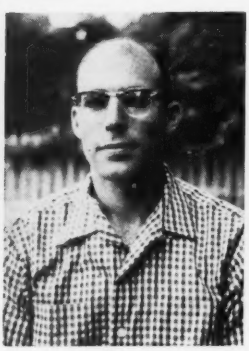
Equipment

Ben Grossman

C. Marlin Shoe

Public Relations

David A. Soricelli



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Benedict B. Kimmé

State Liaison

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Mae Sarsfield

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Robert Moore

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Robert A. Kolb, Jr.

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Martin Moscow

Scientific Luncheon

B. Kimmel

Morris Kelner

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It is a pleasure to send greetings to all those who are attending the 1961 convention of the American Society of Dentistry for Children. Organizations such as yours, whose objectives are to promote maximum health in children, also show a necessary concern for better health for the adults of the future.

Congratulations on the results of your past efforts and best wishes for your continued success in the future.

JOHN F. KENNEDY

GREETINGS:

To all of you attending the 1961 Convention of the American Society of Dentistry for Children, may I extend my cordial greetings.

It is a pleasure to note with pride the achievements and advances in the art and science of dentistry and the role your Society has played in these accomplishments.

The especially concentrated and intelligent efforts of your group in exerting particular attention to the promotion of good dental health for children has immeasurably improved the well-being of our Nation's children.

Best wishes for a convention which will advance and complement your objectives.

DAVID L. LAWRENCE
Governor

TO THE AMERICAN SOCIETY OF DENTISTRY FOR CHILDREN:

As Mayor of the City of Philadelphia it is my pleasure to greet the membership of the American Society of Dentistry for Children and to welcome you to our city for your 1961 Annual Meeting.

We are pleased that you have chosen Philadelphia for your national meeting. Not only is the City of Brotherly Love the Nation's No. 1 Shrine, but we are proud of our reputation as one of the leading medical and dental centers in the world.

I hope during your busy schedule you will be able not only to accomplish the business of your convention, but also to find time to visit our historical and medical landmarks.

May your visit here be the first of many other successful and enjoyable experiences in Philadelphia. My best wishes for a profitable and interesting convention.

Sincerely,

RICHARDSON DILWORTH

It is a pleasure to extend greetings to one of the specialties of our profession on the occasion of this annual meeting.

Through your efforts and dedication, dentistry for children has been emphasized and our people have realized the importance of this dental health care for our juniors.

Congratulations and best wishes for a most successful meeting. May your efforts be filled with satisfaction and gratification, knowing that you are providing a better dental service for our younger generation.

DR. CHARLES H. PATTON
President, American Dental Association

General Information

All sessions of the 30th Annual Meeting of the American Society of Dentistry for Children will be held in the Bellevue-Stratford Hotel.

Registration

The Registration Desk will be located on the 18th floor and will be open during the following hours:

Friday, October 13 ..... 8:00 A.M. to 6:00 P.M.

Saturday, October 14 ..... 8:00 A.M. to 6:00 P.M.

Sunday, October 15 ..... 8:00 A.M. to 2:00 P.M.

All information regarding the scientific and social programs will be available at the Registration Desk. Tickets may be obtained here for the Registered Clinics, Scientific luncheon, President's banquet and other social events.

Rules of Admittance

Admission to all sessions will be by badge, which may be obtained upon presentation of your 1961 A.S.D.C. membership card. All members of the following groups may register as guests upon presentation of their credentials: The Canadian Dental Association, the Pan-American Dental Association, The American Medical Association, the American Dental Hygienists' Association, the American Dental Assistants' Association, representatives of accredited dental colleges, and dental students. Members of the American Dental Association desiring to attend will be required to pay the A.S.D.C. and their appropriate State Unit dues.

Registration badges must be worn and visible at all times during attendance at various sessions.

Admission to registered clinics will be by card of admission in addition to badge. No charge is made, but cards will be available at registration on a first-come-first-served basis until the supply is exhausted.

Executive Council of the American Society of Dentistry for Children will meet on Friday, October 13 at 9:00 A.M. in the Tecumseh Room.

Breakfast Meeting of State Unit Secretaries will be held on Sunday, October 15 at 7:30 A.M. in the Academy Room.

Annual State Delegates Meeting will be held at 2:00 P.M. on Saturday, October 14 in the Rose Garden.

Annual General Business Meeting will be held at 3:00 P.M. on Saturday, October 14 in the Rose Garden.

Social Program

FRIDAY

4:00 P.M.	Registration and Get-together
7:00 P.M.	Pennsylvania Cocktail Party Burgundy Room Evening free for Theatre Going, Philadelphia Tours, Etc.

SATURDAY

10:15 A.M.	Dairy and Apple Break
11:30 A.M.	Guided Tour of Philadelphia Available for the Ladies
12:30 P.M.	Scientific Luncheon, Burgundy Room Bellevue-Stratford Hotel
6:30 P.M.	President's Reception and Cocktail Party, 18th Floor Bellevue-Stratford Hotel
7:30 P.M.	President's Banquet, 18th Floor Bellevue-Stratford Hotel

SUNDAY

10:30 A.M.	Dairy and Apple Break
1:00 P.M.	Luncheon (open)

AFTERNOON

	Guided Tour of Philadelphia Available for the Ladies
4:30 to 7:00 P.M.	Farewell Cocktail Party Burgundy Room

IN YOUR FREE TIME:

Wonderful Philadelphia awaits you with its tours, theatres, movies, radio and television studios, night clubs, shopping, museums, exhibits and architectural wonders.

Condensed Program

FRIDAY	8:00 A.M. Registration 9:00 A.M. Executive Council Meeting—Tecumseh Room 1:30 P.M. Executive Council Luncheon 3:00 P.M. Meeting with Academy of Pedodontics—Rose Garden 7:00 P.M. Pennsylvania Cocktail Party—Burgundy Room	
	SATURDAY, October 14	**SUNDAY, October 15**
MORNING	8:00 A.M. Registration 8:15 A.M. Closed Circuit T.V. Program 10:15 A.M. Dairy and Apple Break 10:30 A.M. Registered Clinics 11:30 A.M. Ladies Philadelphia Tours and Sightseeing	7:30 A.M. State Secretaries Breakfast Meeting Academy Room 8:00 A.M. Registration 9:00 A.M. Registered Clinics 10:30 A.M. Dairy and Apple Break 11:00 A.M. Table Clinics
AFTERNOON	12:30 P.M. Scientific Luncheon Burgundy Room 2:00 P.M. State Delegates Meeting Rose Garden 3:00 P.M. General Business Meeting Rose Garden	1:00 P.M. Luncheon (open) 2:00 P.M. Symposium on Growth Problems Rose Garden 2:00 P.M. Guided Tour of Philadelphia for the Ladies 4:30 P.M. Farewell Party Burgundy Room
EVENING	6:30 P.M. Reception North Garden 7:30 P.M. President's Banquet Rose Garden	RETROSPECTION

A Ladies Hospitality Room will be open in the North Garden Lounge on the 18th Floor throughout the meeting.

ALL FUNCTIONS AT THE BELLEVUE-STRATFORD HOTEL

Closed Circuit Television Program

Saturday, October 14 **Rose Garden** **8:15 A.M.**

The Cleft Palate Team of Children's Hospital of Philadelphia will present, through the medium of a closed-circuit television hook-up between the hospital operating room and the Bellevue-Stratford Hotel, a demonstration of a cleft palate surgical procedure. This will be followed by a discussion of methods of evaluating cleft palate patients.

Henry P. Royster, M.D., will act as the program moderator and participants will include Peter Randall, M.D., Robert H. Ivy, D.D.S., M.D., Charles H. Patton, D.D.S., Wilton M. Krogman, Ph.D., Frank P. Bakes, Ph.D., Herndon B. Lehr, M.D., Charles P. Egoville, D.D.S., J. Curtis Lamp, M.D., Joseph V. Masino, D.D.S. and Miss Rita Tucci.

Subjects to be covered in the discussion will include examination of the newborn, pre-operative physical examinations, timing of lip repair, age at the time of surgery, decision on type of closure, surgical closure, prosthetic closure, post-operative speech problems, orthodontic and pedodontic problems.

There will be an opportunity to present questions from the floor to the participants.

The program is sponsored by Wyeth Laboratories.

JOINT MEETING

The American Academy of Pedodontics has invited the American Society of Dentistry for Children to meet with it on Friday, October 13, at 3:00 P.M. in the Rose Garden of the Bellevue-Stratford Hotel.

Speaker: Aaron Capper, M.D., Clinical Professor of Pediatrics, Jefferson Medical School, Chairman of the Department of Pediatrics, Einstein Medical Center, Philadelphia, Diplomate of the American Board of Pediatrics.

Topic: "Recent Advances in Pediatric Practice."

Scientific Luncheon

Saturday, October 14 **Burgundy Room** **12:30 P.M.**

This is your opportunity to have lunch with enjoyable company while sharing your ideas with distinguished authorities on a subject in which you are interested.

The plan for the Scientific Luncheon is as follows: At each table (seating ten) an announced scientific subject will be discussed during and after lunch. At each table there will be a clinician to lead the discussion and a member of the Scientific Program Committee to guide it.

Members who attend the Luncheon will choose the table they wish and will remain there throughout the Luncheon and discussion.

As there will be only ten to a table, you will have ample time to present your questions.

The fee for the Luncheon is $5.00. All reservations must be accompanied by your check.

Attendance will be absolutely limited to ten per table. Therefore, reserve early.

1. **Patient Management**
   Dr. Harold K. Addelston
2. **Fixed and Removable Prosthesis for Children**
   Dr. Albert L. Anderson
3. **The Psychological Response of Children to Hospitalization, Anesthesia and Operations**
   Dr. Leonard Bachman
4. **Growth and Development of Occlusion**
   Dr. Thomas K. Barber
5. **Periodontal Diseases of Children**
   Dr. Harvans Bhatia
6. **Pulp Capping**
   Dr. Harold Berk
7. **Periodontal Disease in Childhood**
   Dr. M. Michael Cohen
8. **General Anesthesia for Uncooperative Children**
   Dr. Wayne D. Dunnom
9. **Removable Appliances in Interceptive Orthodontics**
   Dr. Sidney B. Finn
10. **Parent Education and Case Presentation**
    Dr. Francis J. Fleege
11. **The Pulp in Pedodontics**
    Dr. Mollie D. Foster
12. **Fractured Incisors**
    Dr. John E. Gilster
13. **Pre-orthodontic Problems and Simple Appliances for Early Interception**
    Dr. Samuel D. Harris
14. **Is There Such a Thing as Topical Fluoride Therapy?**
    Dr. Roland R. Hawes
15. **Interpretation of Growth Problems in Children**
    Dr. Samuel Hemley
16. **Full Coverage as a Restorative Therapy in Pedodontics**
    Dr. William P. Humphrey

Scientific Program

REGISTERED CLINICS

Saturday, October 14 **10:30 A.M.—12:00 P.M.**

Sunday, October 15 **9:00 A.M.—10:30 A.M.**

Saturday's Registered clinics will be repeated on Sunday, with the exception of numbers 13 and 14. No charge is made for attendance, but cards of admission should be obtained upon registration. Admission will be by badge and card only.

1. An Understanding of Growth and Development in the Practice of Pedodontics

DR. SAMUEL PRUZANSKY
DR. THOMAS K. BARBER
DR. AUBREY LAUTERSTEIN
DR. RONALD KINDELSPERGER
Cleft Palate Clinic and Training Program
Center for Handicapped Children, Chicago
Robert Boller—Presiding Saturday — *Tecumseh Room*
Jason Lewis—Presiding Sunday

2. The Use of Removable Appliances in Preventive or Interceptive Orthodontics

DR. SIDNEY B. FINN
Professor of Pedodontics, University of Alabama, School of Dentistry
John Lavelle—Presiding Saturday — *Academy Room*
Charles Boyer—Presiding Sunday

3. General Anesthesia for Children

DR. LEONARD BACHMAN
Director, Department of Anesthesiology
The Children's Hospital of Philadelphia
Zalman Konikow—Presiding Saturday — *Studio Room*
Alvin Morris—Presiding Sunday — *2nd Floor*

4. Prosthetic Appliances for Children

DR. ALBERT L. ANDERSON
Past President, American Society of Dentistry for Children
Jay Ginns—Presiding Saturday — *Assembly Room*
Edward Blackman—Presiding Sunday

5. Local Anesthesia and Oral Surgery for Children

DR. NORMAN OLSEN
Associate Professor and Chairman of Department of Pedodontics, Northwestern University, School of Dentistry
Jason Lewis—Presiding Saturday — *Blue Room*
H. Curtis Hester—Presiding Sunday — *Studio Room*, *2nd Floor*

6. Oral Lesions

DR. M. MICHAEL COHEN
Stomatologist, Boston Floating Hospital
Faculty, Tufts University School of Medicine
Edward Blackman—Presiding Saturday — *Crystal Room*
Zalman Konikow—Presiding Sunday — *Oak Room*

7. Treatment of Injured Anterior Teeth

DR. JOHN E. GILSTER

Professor of Pedodontics, Washington University, School of Dentistry

Irving Posnick—Presiding Saturday — *Gold Room*

John Lavelle—Presiding Sunday — *Studio Room, 2nd Floor*

8. Patient Management

DR. HAROLD K. ADDELSTON

Professor of Pedodontics, New York University, College of Dentistry

Nathan Tucker—Presiding Saturday — *North Garden Foyer*

Jay Ginns—Presiding Sunday

9. Aids and Procedures Used in Practice Management

DR. LAREN TEUTSCH

Former Director, Department of Pedodontics, Creighton University

Kermit Botkin—Presiding Saturday — *Poor Richard*

Hugh Kopel—Presiding Sunday — *South Garden*

10. Pulp Therapy for the Primary and Young Permanent Tooth

DR. DAVID B. LAW

Professor of Pedodontics, University of Washington, School of Dentistry

Robert Spangler—Presiding Saturday — *North Garden*

Robert Boller—Presiding Sunday

11. General Operative Procedures for Children

DR. RALPH L. IRELAND

Dean and Professor of Pedodontics, University of Nebraska, College of Dentistry

Gustave C. Tassman—Presiding Saturday — *Viennese Room*

Edward P. Shamborsky—Presiding Sunday

12. Periodontal Diseases of Children

DR. HARVANS BHATIA

Assistant Professor, Department of Pedodontics, University of Southern California, School of Dentistry

Charles Boyer—Presiding Saturday — *Studio Room*

Saul Blumenthal—Presiding Sunday — *2nd Floor*

SATURDAY SESSIONS ONLY

13. A New Approach to Caries Control

DR. MAURY MASSLER

College of Dentistry, University of Illinois

Thomas P. Fox—Presiding — *Pink Room*

14. Audio-Visual Education for Parents

DR. ROY M. WOLFF

American Academy of Pedodontics

Saul Blumenthal—Presiding — *Red Room*

President's Banquet

The American Society of Dentistry for Children will honor its outgoing president James H. Simmons with a gala reception and banquet on Saturday evening, October 14.

The reception will be held in the North Garden on the 18th floor of the Bellevue-Stratford Hotel, and is set for 6:30 P.M.

The banquet will take place at 7:30 P.M. in the adjacent Rose Garden.

This is A.S.D.C.'s outstanding social event of the year, and you will not want to miss it.

Reservations should be made in advance to avoid disappointment.

Make checks for $12.50 per person payable to the American Society of Dentistry for Children and send them to the chairman with your reservation form.

Music for dinner and dancing will be provided by Lou King and his orchestra, stars of radio and television, who have made numerous recordings for leading companies. Lou is a familiar figure in the Philadelphia and Atlantic City areas, having appeared with his orchestra at the Latin Casino, the Embassy and at the Traymore.

For a fun-filled evening with your Pedodontic colleagues from all over the western hemisphere, make your banquet reservations now!

TABLE CLINICS

SUNDAY, OCTOBER 15, 1961
11:00 A.M. to 1:00 P.M.

Eighteenth Floor
BELLEVUE-STRATFORD HOTEL
Philadelphia, Pa.

1. **JACK L. ANDERSON, D.D.S., Wayzata, Minnesota**

   "Chloral Hydate in Pedodontics."

2. **MILTON B. ASBELL, D.D.S., M.Sc. (dent.), Camden, New Jersey**

   "The Dento-Facial Complex in the Cooley's Anemia Patient."

3. **ROBERT J. BOLLER, D.D.S., Minneapolis, Minnesota**

   "Development of the Teeth During the Fetal Period."

4. **MAX L. BRAMER, D.D.S., Chicago, Illinois**
   ARNOLD STEINBERG, D.D.S.

   "Simplified Radiographic Surveys and Aids in the Treatment of the Handicapped."

5. **ROBERT R. BUCKLEY, M.S., D.D.S., Indianapolis, Indiana**

   "Bruxism and Athetosis in Cerebral Palsy."

6. **COLORADO PEDODONTIC STUDY GROUP**

   WILLIAM E. CODY, D.D.S.

   "The Class III Gold Foil in Young Permanent Anterior Teeth."

   JACK M. EISENSON, D.D.S.

   "Space Maintenance Involving the Unerupted First Permanent Molar."

   WILLIAM P. HUMPHREY, D.D.S.

   "Chrome Steel in Dentistry for Children."

   KENNETH W. POLLACK, D.D.S.

   "Modifications of Hawley Type Retainers."

7. **DEMERITT PEDODONTIC STUDY CLUB, North Carolina**

   METT AUSLEY, D.D.S.

   "Motivation."

   R. B. BARDEN, D.D.S.

   "Removable Space Maintainers."

   DON BLAND, D.D.S.

   "Pulp Therapy."

   ZENO EDWARDS, D.D.S.

   "Economics."

   TOM FLEMING, D.D.S.

   "Periodontal Problems."

   CHARLES GODWIN, D.D.S.

   "Restorative Dentistry."

   BILLY HAND, D.D.S.

   "Palliative Orthodontics."

   DON HENSON, D.D.S.

   "Fixed Space Maintainers."

   BEN HOUSTON, D.D.S.

   "Preventive Dentistry."

   JIM LEE, D.D.S.

   "Steel Crowns."

   LEWIS LEE, D.D.S.

   "Fractured Anteriors."

(Continued on next page)

TABLE CLINICS . . . *Continued*

8. **EASTMAN DENTAL DISPENSARY, Rochester, New York**

   JOSEPH DI MAGGIO, D.D.S.
   STANLEY HANDELMAN, D.M.D.

   "Space Regaining."

9. **FAIRLEIGH-DICKINSON SCHOOL OF DENTISTRY, Teaneck, New Jersey**

   MELVIN BELLET, D.D.S.

   "Practical Aids in Operative Dentistry for Children."

   ELIAS LISMAN, D.D.S.

   "X-Ray Diagnosis and Interpretation in Pedodontics."

   WALTER SCHWARTZ, D.D.S.

   "Aids in Behavior Management of the Child Patient."

10. **ALBERT GREEN, D.D.S., and MARVIN KING, D.D.S., New York, New York**

    "The Office Management of Handicapped Children."

11. **RAYMOND B. KIELICH, D.D.S., Buffalo, New York**

    "Improved Tooth Relationship with Simple Appliances."

12. **JAMES B. KING, JR., A.B., D.D.S., Pittsboro, North Carolina**

    "Pedodontia for the General Practitioner."

13. **Z. KONIKOW, D.D.S., Royal Oak, Michigan**

    "A Practical Approach to Premedication."

14. **SEYMOUR KOSTER, B.A., D.D.S., Port Chester, New York**

    "Preventive Orthodontics for the Handicapped Child."

15. **MARVIN KOZLOV, D.D.S., M.S., Chicago, Illinois**

    "The Action of Drugs on Amputated Pulps."

16. **THEODORE C. LEVITAS, D.D.S., Atlanta, Georgia**

    "Radiology, Radiation and Children."

17. **CHARLES J. MEHLUM, D.D.S., Phoenix, Arizona**

    "A Philosophy of Dental Practice."

18. **ANDREW E. MICHANOWICZ, B.S., D.D.S., Pittsburgh, Pennsylvania**

    "What to Do on Traumatically Involved Permanent Anterior Teeth in the Pedodontic Patient."

19. **BARRY G. MILLER, D.D.S., M.S., and CARLTON V. WINTER, D.D.S., M.S., Charlotte, North Carolina**

    "The Distal Shoe Appliance."

20. **W. NEAL NEWTON, D.D.S., and ROGER L. PARROTT, D.D.S., St. Louis, Missouri**

    "The Cantilever Space Maintainer."

21. **RICHARD NAISMITH, D.D.S., Oakland, California**

    "Group Practice—Why Not?"

22. **PAUL D. QUILLMAN, B.S., D.D.S., Chicago, Illinois**

    "A Demonstration of the Location of Lactobacilli as Related to Caries Activity."

23. **GALEN W. QUINN, D.D.S., M.S., Durham, North Carolina**

    "Significance of Early Occlusion Diagnosis."

24. **ARNOLD ROSENBERG, D.D.S., Yonkers, New York**

    "Diagnosis and Treatment Planning in a Pedodontic Practice."

25. **SETON HALL COLLEGE OF MEDICINE AND DENTISTRY, Jersey City, New Jersey**

    ABRAHAM KOBREN, B.S., M.S., D.D.S.
    OVID SLAVIN, A.B., D.D.S.

    "Treatment of Traumatic Injuries to the Anterior Teeth of Children."

26. **MARVIN SNIDERMAN, D.D.S., Pittsburgh, Pennsylvania**

    "What Drugs to Prescribe."

27. **HOWARD J. TUCKER, D.D.S., Pittsburgh, Pennsylvania**

    "Pulpal Therapy and Practical Procedures."

28. **TUFTS UNIVERSITY SCHOOL OF DENTAL MEDICINE, Boston, Massachusetts**

HAROLD BERK, D.D.S.

"The Vital Exposed Fractured Anterior Tooth."

ARNO BOMMER, D.M.D.

"Cavity Preparation in the Primary Teeth."

M. MICHAEL COHEN, D.M.D.

"Oral Lesions in the Young Child."

HELMI FOGELS, D.M.D.

"The Value of Removable Appliance for the Mixed Dentition."

SPENCER, FRANKL, D.D.S.

"The Influence of Infected Primary Teeth on the Developing Dentition."

JOHN MacLAUGHLIN, D.M.D.

"Introduction of the Child Patient to Office and Patient Management."

JOHN MEADE, D.M.D.

"Finishing and Polishing Amalgam Restorations."

ADELAIDE O'BRIEN, D.H.

"The Value of Parent Education."

C. ELWOOD PARKER, JR., D.M.D.

"High Speed and the Young Child—an Evaluation of Present Day Cutting Techniques."

MARTIN ROSENGARTEN, D.D.S.

"Local Anesthesia for Children."

FREDERIC SHIERE, D.D.S.

"Cast Space Maintainers—Design and Technique."

ANDREW WESTON, D.M.D.

"The Value of X-Rays in the Treatment, Diagnosis and Case Management of the Primary Dentition."

SUMNER WOLFSON, D.M.D.

"Banding and Filling of Primary Teeth."

29. **JAMES WHITCOMB RILEY PEDODONTIC STUDY CLUB, Indianapolis, Indiana**

FUTHRIE CARR, D.D.S.

"Rubber Dam Technique."

La FORREST GARNER, D.D.S.

"Regaining Space Lost Due to Mesial Drift."

WILLIAM GILLIG, D.D.S.

"Care of Fractured Permanent Incisors."

DAVID McCLURE, D.D.S.

"Injection Technique for Children."

JOHN R. MINK, D.D.S.

"Crown and Bridge for the Young Adolescent."

RICHARD NORMAN, D.D.S.

"Dental Materials in Pedodontics."

Dr. Krogman to Be Honored

The American Society of Dentistry for Children will honor Dr. Wilton M. Krogman, Professor and Chairman of the Department of Physical Anthropology of the Graduate School of Medicine and Evans Dental Institute of the University of Pennsylvania, and Director of the Philadelphia Center for Research in Child Growth.

Dr. Krogman will receive an illuminated certificate for his contributions to scientific and pedodontic knowledge. The presentation will be made at the President's Banquet on Saturday evening.

NOTES

Panel Discussion

Sunday, October 15 **Rose Garden** **2:00 P.M.**

INTERPRETATION AND TREATMENT OF GROWTH PATTERNS IN CHILDREN

Moderator:

SIDNEY I. KOHN, D.D.S.

Professor of Pedodontics, Fairleigh-Dickinson School of Dentistry

Panelists:

1. **SAMUEL HEMLEY, D.D.S.**

   Professor of Orthodontics, New York University College of Dentistry

   "Implications of the Bilateral Vertical Masticatory Stroke"

2. **JOHN R. THOMPSON, D.D.S.**

   Professor and Chairman, Department of Orthodontics, Northwestern University School of Dentistry

   "Facial Patterns—Their Implication to Orthodontic Therapy and to Function"

3. **THOMAS K. BARBER, D.D.S., M.S.**

   Associate Professor of Pedodontics, University of Illinois College of Dentistry

   "Problems of Arch Length Loss and Subsequent Treatment"

Past Presidents

Dr. Walter C. McBride 1927
Dr. F. Blaine Rhobotham 1928
Dr. John E. Gurley 1929
Dr. Edward Sullivan 1930
Dr. Samuel D. Harris 1931
Dr. Thaddeus P. Hyatt 1932
Dr. Haidee Weeks 1933
Dr. Charles A. Sweet 1934
Dr. Walter T. McFall 1935
Dr. E. L. Pettibone 1936
Dr. Floyde E. Hogeboom 1937
Dr. John C. Brauer 1938
Dr. Konrad Lux 1939
Dr. Frank Lamons 1940
Dr. Ralph L. Ireland 1941-5
Dr. Jack Wisan 1946
Dr. R. Mott Erwin, Jr. 1947
Dr. Alfred E. Seyler 1948
Dr. W. James Taub 1949
Dr. Hugo M. Kulstad 1950
Dr. Earle L. Lampshire 1951
Dr. George Teuscher 1952
Dr. Hugh Keenan 1953
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Dr. William E. Brown 1959

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Make A.S.D.C. Reservations Now!

Name .....

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Scientific Program

Gentlemen:

Kindly reserve space for me on Saturday, October 14 and Sunday, October 15, 1961, for the following:

		1st choice	*2nd choice*
Registered Clinics	Saturday	.....	.....
	Sunday	.....	.....

Please indicate your preference by marking in the spaces provided on the Application Blank, the name and day of the clinic you wish to attend. Indicate second choice as well.

Every effort will be made to give you your first choice, but if that Clinic is filled, you will be enrolled according to your second or third choice.

No charge is made for Registered Clinics.

	No. of Tickets	*Amount*
Scientific Luncheon (Saturday) ($5.00) each	.....	.....

Social Program

I also wish tickets for the following events:	*No. of Tickets*	*Amount*
Pennsylvania Welcome Party (Friday) ($1.50) each	.....	.....
President's Banquet (Saturday) ($12.50) each	.....	.....
President's Cocktail Party (dutch treat)		
Farewell Party (Sunday) ($1.50) each	.....	.....

I enclose my check for: (total) .....

Signature.....

Print your name and address on the blank.
Make your check payable to the American Society of Dentistry for Children.
Telephone reservations can not be accepted.
Mail to: Dr. Manuel M. Album, Medical Arts Bldg., Jenkintown, Pa.

Make Plans Now

to Attend the

31st Annual Meeting

of the

American Society of

Dentistry for Children

at

Miami Beach, Florida

Friday, Saturday and Sunday

October 26, 27, 28, 1962